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RESECTION OF THE POSTERIOR ROOTS OF THE SPINAL CORD

WITH THE REPORT OF ONE CASE AND CITATION OF OTHER CASES AS A BASIS OF INQUIRY INTO THE COURSE OF THE SENSORY PATHWAY *

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MINNEAPOLIS

To provide a suitable introduction to my subject, the following case is outlined:

History.—Mr. X. was first seen by me Dec. 24, 1908. He was 50 years of age, married, and the father of four living, healthy children. His father, who had been previously rheumatic, died at 82 of old age. His mother died of syncope at 64. He has one brother who is healthy and well except that he is an asthmatic. There are no nervous or mental troubles, tuberculosis, or malaria in him or his family. He was never nervously ill.

In 1881, when 20 years old, he was circumcised, and he may have had syphilis at that time, but the history of it is uncertain, and there were no demonstrable evidences of lues at the time of his first examination, in 1907. His habits have always been temperate and his bodily functions normal.

In 1891, or sixteen years before his visit, twitching began in his right forearm on the radial side. Later there was a dull ache in the same region, followed by shooting pains, spreading through the arm, involving the right arm and shoulder, and extending into the dorsal side of the head of the radius, and later centering at two main points, the thenar eminence and the lower attachment of the deltoid about the superficial aspect of the musculospiral nerve. Not infrequently the right scapula was the seat of pain. The pain-seizures were paroxysmal, and grew in frequency and severity, and they were apparently more or less influenced and aggravated by changes in the barometer.

In 1903, his pains became so severe that his musculospiral nerve was stretched; but not even temporary relief followed this operation.

Examination.—He came to Minneapolis Dec. 24, 1907, and exhibited during his visit here marked evidences of paroxysms of pain. He clutched wildly at his thenar eminence and at a point below the deltoid and behind the shoulder. These paroxysms recurred every day at short intervals during the day, but were less noticeable when his attention was diverted. He had no anesthesia of the shoulder, arm, forearm, or hand, nor in any other part of his body. His pupils were small, almost pin-points. The right pupil was smaller than the left, irregular in outline, and reacted slightly to light. His vision was myopic. These two symptoms, shooting pains and pupillary changes, justified the diagnosis of high tabes, made by his physicians, Drs. Frank Fry and William Graves, of St. Louis, who had had him under observation for years. A celebrated Scottish neurologist had made a diagnosis of neuromata of the cervical spinal nerves.

The reflexes, deep and superficial, of the arms, trunk, and legs, were normal. The station and coordination were good, and he had no ataxia of the arms or legs.

The few symptoms that were present made the diagnosis difficult, other than that a central cord lesion was probable.

Operation.—As he had been thoroughly medicated by mercurials and iodids he was told that there was one course open to him, namely, a sectioning of a trunk nerve in the neck, or laminectomy and posterior root section. The former operation was chosen, and a large connecting trunk, presumably between the fifth and sixth cervical nerves, was sectioned in the neck Jan. 8, 1908. Relief from pain and spasm was immediate, and he was reasonably comfortable for a few months. Gradually the paroxysms of pain returned, and he came again for relief. Jan. 23, 1909, he was operated on by Drs. H. W. Jones and A. S. Hamilton. An unilateral laminectomy was performed on the right side by cutting through the laminæ and exposing the cord with the roots from the lower half of the cervical segments. The dura was incised and the spinal fluid allowed to escape slowly. The incision was enlarged and the sensory roots of the fifth, sixth and seventh cervical nerves were raised on a hook with great care so as to include all of the fibers. The roots were then grasped with compression-forceps and resected, cutting them where they emerged from the cord and as near their emergence from the dura as possible. It was thought that all of the strands were exsected. The dura was closed with catgut, and the skin was closed with subcuticular silkworm gut.

Greatly to our disappointment and to the astonishment of the patient, he waked from his anesthetic in pain and agony and without a clearly defined area of anesthesia. A map of the usual distribution of peripheral sensory nerves was used as a basis of comparison, but the patient failed to verify the outlines on the map. By careful investigation we thought we discovered a change in sensation, but in a few days the arm had regained its natural sensitiveness. If there was any change in sensation at any time following the operation it was so slight as to be considered unreliable. The patient recovered from the operation, and his cervical spine was in no way impaired, but the paroxysms of pain increased in frequency and severity. He returned home, and during the spring and summer he suffered great pain, and was forced to use opiates.

Second Operation.—He went to St. Mary's Hospital, at Rochester, Minn., and was operated on by Dr. C. H. Mayo, Aug. 11, 1909. The unilateral laminectomy was repeated, and the sensory roots of the fourth and eighth cervical nerves were exsected. Dr. Mayo thought at the time of this operation that there remained a few filaments from the fifth, sixth and seventh nerves, which had been previously removed. This seems hardly likely, as the operation was done with the greatest care. At all events, a marked anesthesia should have followed the root section. The relief from pain after Dr. Mayo's operation was marked within a few days. The arm lost its spasticity and became more or less useless; and the right leg dragged, probably due to a superficial injury or hemorrhage into the substance of the cord.

The patient writes me under date of June 2, 1911, as follows:

"I am free to say that, although I was relieved from the terrible condition I was in, I am in anything but a satisfactory condition at present. My walking is impaired and the right leg has never entirely regained its power or control, and I

* Chairman's Address before the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

tire very quickly. There is a lack of sensation in the toes of the right foot, but that does not inconvenience me to any considerable extent. There has been quite a loss of sensation in the right shoulder and arm, especially along what I should call the top of the arm to the thumb, forefinger, and second finger, but there is always a terrible tension in the arm, especially in the forefinger. At times it almost seems as if the filaments would be drawn from the finger. I cannot describe it otherwise. When a change of the atmospheric conditions is approaching I feel it very severely, the throbbing and twitching of the hand being especially acute. On the lower outside portion of the arm (in a line with the point of the elbow) the sensation is not nearly so acute. I cannot use the arm, except to shake hands or to carry a light weight, such as an umbrella, and I might say that I have to make my arm do that and watch it while it is being done. At the back of the collar bone, at the foot of the incision of the operation of 1908, I have a sensation as if a hot iron were being pushed in there, and my neck muscles become rigid. As a matter of fact, I do not think the nerves are any more dead in the arm than they were before the operation, but, as I have said before, I have received considerable relief from the last operation. Unfortunately, on account of my lack of strength I cannot take much exercise, so have increased in weight to an uncomfortable degree. Prior to 1908 I never weighed over 172 pounds and before the operation at Rochester, in August, 1909, I weighed 135 pounds. To-day I weigh 195, and my weakness makes it hard to carry this weight.

"In closing, I wish to say that if anyone in a condition similar to mine should ask my opinion, I would strongly urge him to avoid the knife. This may seem ungrateful, but while I suffered terrible pain, I had the strength to carry and use my arm. . . .

"One thing I overlooked; at night I sometimes never move from lying down to getting up, but when the time comes to rise it is hard to get turned around and get up. My nerves strain me, and I almost feel as if I should become disjointed. The same condition occurs on a smaller scale if I have been sitting for a half hour or so. I might also add that when the atmospheric condition changes, the weight of my arm increases as if I were carrying a heavy weight on my shoulder. This is as near as I can describe my condition at present."

This case is only one of many reported in this country and abroad, in which an operation has been employed for the relief of pain, spasticities, athetosis, post-hemiplegic contractures, spastic paraplegia, and gastric crises in tabes.

To Dr. C. L. Dana of New York belongs the credit for this operation, and the first of its kind in this country was done by Dr. Robert Abbe, Dec. 31, 1888. Mr. Bennett, a London surgeon, under the direction of Sir Victor Horsley, operated on a similar case seven days before Dr. Abbe's operation. These episodes led to much open discussion, and the claims for priority of operation have never been definitely settled, but it has been conceded by other writers that the principles of the operation were first enunciated by Dr. Dana.

Förster, a Breslau surgeon, in 1908, wrote a very exhaustive treatise on root-section operation from its theoretic, as well as its practical, aspects, and he emphasized its usefulness in spasticities and athetosis. He reported five patients operated on by Tietze, one of whom was a girl of 11 years with painful spasms and nearly complete paraplegia following a tuberculous spondylitis. The third and fifth lumbar and second sacral roots were divided on the left side, and the third lumbar and first sacral on the right side. The relief from spasm and pain was decided, and there was improvement in locomotion. No disturbance of sensation followed the operation.

Chipault and Demaulin, in 1895, in the *Gazette des hôpitaux*, have contributed cases and literature.

Dr. Morton Prince in *Brain*, spring, 1901, records the section of a posterior spinal-nerve root for the relief of pain in a case of neuritis of the brachial plexus, following a Colles' fracture of the left wrist, in which there was absolute paralysis of nearly the whole left arm and reaction of degeneration, atrophy, and pain in the thumb and forefinger. Evidently the roots of the fifth, sixth and seventh cervical fibers were most severely injured. However, of these three the fifth and sixth suffered the most. The man was operated on three times; first the radial nerve was stretched; later, two other operations on nerve trunks were done. Before the operations there was anesthesia over the deltoid distribution and over the little, the ring, and one-half of the middle finger. This may have been due to one of the operations or to an extension of the neuritis. A laminectomy was done which produced a cessation of pain in the fore-arm. Later, a Brown-Séquard's paralysis developed, and still later there was a partial return of sensibility. The fifth, sixth and seventh cervical spinal roots were divided, and an absolute loss of sensation for touch and pain followed, limited to the whole thumb with its ball, the back of the hand, and a strip along the radial aspect of the forearm and arm. The palmar surface of the forearm and middle fingers and the region generally given to the sixth root were not anesthetic.

Dr. George W. Jacoby[1] recorded cases of posterior nerve-root section which were more or less benefited, and pointed out the dangers of a Brown-Séquard paralysis.

Abbe[2] records a case of intractable brachial neuralgia in which nerve-stretching and amputation had been done by another surgeon, and in which Dr. Abbe finally made an intradural division of the posterior roots of the sixth, seventh and eighth cervical nerves with improvement. During this operation an electrode was applied to the sixth nerve root, which caused contraction of the supraspinati and infraspinati, brachialis, latissimus dorsi, pectoralis major, teres, and deltoid. In this case the first operation consisted of dividing roots outside the dura. Pain was present on awakening. Forty-eight hours later, and without an anesthetic, the surgeon made an intradural section of the seventh and eighth roots, but the same kind of pain continued that he had had previously. An application of a blunt instrument to the posterior columns caused intense and widely distributed pain. After the final operation, the pain gradually ceased, and there was general improvement, with some anesthesia over the outer side of the arm from the deltoid downward across the neck in front to the center of the clavicle and behind to the center of the scapula. A degenerative neuritis was established by the microscopic findings. Seven or eight years after the operation the patient complained of drawing pain in his stumps with anesthesia as before over the deltoid. He resumed the morphin habit, which he had contracted early, so that the quality of pain could not be accurately estimated. Abbe records another case of spastic paraplegia with pain in the left leg and recurring muscular spasms. The four posterior lumbar roots and the upper sacral roots were divided. Pain disappeared, and anesthesia developed early, but the sensation returned. The patient died of apoplexy on the twelfth day.

Drs. Frank R. Fry and Sidney I. Schwab[3] of St. Louis reported a case of laminectomy for postsyphilitic nerve-root pain. A laminectomy of the third, fourth

1. Jacoby, G. W.: New York Med. Jour., Aug. 3, 1907.
2. Abbe: Tr. Med. Soc. New York, February, 1889.
3. Fry and Schwab: Jour. Nerv. and Ment. Dis., August, 1910.

and fifth dorsal vertebræ exposed the cord, and after releasing the adherent dura, the fourth and fifth dorsal roots were severed. There was no opportunity to observe the presence or absence of sensation, as the patient died in a few hours. He was relieved of pain, however, during his conscious state.

Dr. John J. Thomas of Baltimore records a case of resection of the dorsal spinal nerve-roots for gastric crises in tabes with successful outcome.

Dr. Philip Coombs Knapp of Boston reports a case of tabetic pain in which Dr. Blake divided the seventh, eighth, ninth and tenth dorsal roots, with only temporary relief.

Dr. D. I. Wolfstein of Cincinnati records a case in which four roots in the dorsal region were divided for pain. There was an area of anesthesia corresponding to the definite root-areas, but no diminition of pain in these areas.

Dr. Charles H. Frazier[4] reports three cases in which he operated for spasticity and athetosis. The first patient was greatly relieved, and the second improved as to spasticity and athetoid movements, although of cerebral origin. The third case of spastic paraplegia was one in which the third and fifth lumbar and first sacral roots were divided on both sides. The spasticity was improved without loss of touch and pain sensation.

Dr. Spiller,[5] in 1905, advocated resection of the posterior roots for the relief of spasticities.

Frazier and Spiller[6] report one case.

Dr. Alfred S. Taylor of New York, who is an advocate of unilateral laminectomy, has, up to this time, performed seventeen operations, five of which were for pain.

CASE 1.—The eighth cervical and first dorsal sensory roots were cut and the pain relieved over the distribution of the first dorsal.

CASE 2.—Gastric crises in tabes. The seventh to the tenth dorsal roots were cut on both sides with prompt relief.

CASE 3.—In a boy with painful spasms in the arm occurring every few moments, the upper half of the sixth and all of the seventh and eighth cervical and first dorsal roots were cut. Complete relief of pain and spasm was experienced, but some stiffness remained.

CASE 4.—A simple laminectomy was performed without root-section, the patient experiencing much benefit.

CASE 5.—Gastric crises with tabes. The seventh to tenth dorsal roots on both sides were cut. The results were uncertain, as the patient had been a morphinist and complained of severe pain after the operation.

CASE 6.—A spastic and painful leg. The fourth and fifth lumbar and first sacral and part of the second sacral roots were sectioned on both sides, and relief obtained.

Dr. Charles A. Elsberg and his assistant, Dr. Beer, of the New York Neurological Institute, have cut the posterior spinal roots nine times during the past two years. In five of the patients, the operation was done for spasticity. There was great improvement in three of these patients, but only temporary improvement in the remaining two. In a case in which there had been an unsuccessful search for a spinal tumor by another surgeon three months before and which was later diagnosed as a case of lateral sclerosis, a double laminectomy was performed in July, 1910, for section of the posterior roots on both sides. The third and fifth lumbar and first sacral roots were cut, with the result that there was a marked relaxation of spasticity in the lower extremities for four weeks, and then a gradual return of spasticity in both lower extremities, with marked hyperesthesia over an irregular area,—the entire foot over the back and front and about two-thirds of the leg. This hyperesthesia did not follow the lines usually mapped out as supplied by the fifth lumbar root. There were no sensory disturbances following the operation. Death followed four months later from exhaustion. The autopsy showed a spinal tumor in the dorsal region.

Of the two last-mentioned patients, Patient 4 was operated on because of an old hemiplegic spasticity with athetosis. This patient's spastic upper extremity was much relaxed for about one month. Then the spasticity began to return and after six months was as marked as before the operation.

In the fifth patient, in whom only two roots were cut by Dr. Beer, some sensory loss was observed after the operation, much to the surprise of the operator.

Posterior-root section was done four times on account of pain. One patient had an infiltrating fibrolipoma of the cauda equina, which could not be removed. As she had suffered severe pain in the distribution of the fifth lumbar posterior root, it was divided on the left side, and she was entirely freed of her pain by root section.

In the second patient, in whom root section was done for pain in her upper extremity from a chronic spinal meningitis, a section of one-half of the seventh cervical, eighth cervical, and first dorsal produced sensory disturbance following the operation, and relief was not obtained from the sectioning.

In the third patient, a section of all of the posterior roots going to the left upper extremity was made for relief of the excruciating pain in an amputated extremity. An amputation of the wrist had been done for sarcoma of the hand, and a second amputation was done by a surgeon in an attempt to relieve the neuralgia which followed the first amputation. The pain in this case was not relieved by the section of the posterior roots.

In the fourth case several posterior roots were cut, among them the eighth and ninth dorsal, in order to relieve severe root pains, the origin of which could not be determined. No relief was obtained by the patient; and no anesthesia was noted after the operation. None of these cases died from operation.

The one case I reported is a fair illustration of the difficulties in making a correct diagnosis in intractable painful conditions. The differentiation between a peripheral nerve-trunk disease, tabes, and a painful impression from cerebral disorder is not always possible. This case creates, as do other cases similar in their symptomatology, a hesitancy in accepting the former conception of the sensory paths in the spinal cord.

The model diagrams compiled by many investigators are evidently subject to modification in different individuals, and it is fair to assume that the segments of the cord do not invariably preside over definite skin or muscle areas; neither can one be sure that two, or even three, segments contain the landing-stations for representation in the skin. In many of the cases reported in which excision of several posterior roots was done for pain or spasticity, anesthesias that correspond to old or recent diagrams failed to develop. One must expect any sort of surprise after posterior-root section: an unusual anesthesia, a slight approach to loss of sensation, a temporary but uncertain modification of sensation that is suggestive of the usual lines of distribution, a hyperesthesia perhaps, or no disturbance of sensation

4. Frazier, C. H.: Jour. Surg., Gynec. and Obst., New York, [illegible], No. 1.
5. Spiller: Jour. Nerv. and Ment. Dis., May, 1905.
6. Frazier and Spiller: Univ. Penn. Med. Bull., January, 1910.

whatever. The distribution attributed to certain nerve-roots is unreliable, as evidenced by my case and other cases already cited, and shows that, in certain individuals at least, the sixth cervical does not always receive sensory impression from the radial side of the hand and arm. The argument is advanced that in these operations the posterior roots are not thoroughly severed, but this criticism is not just and casts discredit on a skilled operator or observer. We might better admit that sensory impulses are received by the spinal cord through many segments and that the sensory pathway into the cord from the periphery is split up into many parts.

We may also be forced to admit that the pathway in the cord is not as uniform as we formerly held; that fibers for various sensations are scattered widely and have more than one representative column.

Karl Petren,[7] in an analysis of 96 cord injuries, shows that the sense of touch is represented in the posterior column of one side of the cord and in the lateral columns of the opposite side. This may explain, in a measure, why sensation is not always impaired or lost when posterior roots are sectioned. Dana holds that some of the sensory tracts, notably of pain and temperature, are located in the deep white tracts of the cord in front of the crossed pyramidal bundle. It is not improbable that the sensory pathway in the spinal cord is crossed and recrossed in its upward approach to the cortex and that this intricacy of lacing fibers may be so involved that it is impossible to determine accurately segmental receiving stations. Take, for example, the frequent failures to relieve permanently spastic muscles by root-section, granting also that the motor tracts are involved. In some of the cases reported, improvement lasted only from one to six months. Is the return of the spasm due to a repair or regrowth of the cut sensory roots, a condition emphatically denied by investigators; or may we assume that other segments, like collateral blood-vessels, take up the function of its injured neighbor; or are sensations conveyed into the cord by sensory fibers running in motor roots; or shall we go higher and consider the cortex of the brain and its memory of painful impressions?

Sherington has shown that cutaneous zones do not correspond numerically with the course of the ribs, but are, in general, much lower, and that each spinal root contributes fibers to several peripheral sensory nerves; yet the territory covered by a single root is never a patchwork, but an area.

Zabinski, in a case of ascending neuritis of one arm on which many operations had been performed, finally made an intradural section of the sixth, seventh and eighth cervical and the first dorsal and secured immediate relief from pain, which returned slightly in the second week and was accompanied by anesthesia up to the middle of the arm. This case proved the correctness of the old diagrams.

Abbe and Dana, following Féré's tables, have worked out the areas supplied by the sixth, seventh and eighth cervical nerves in relation to muscles and sensation. The sixth cervical supplies the latissimus dorsi, deltoid, teres major, pectorales, and the supra- and infraspinati; and it also carries sensation from the outer part of the shoulder, arm and forearm, and the radial distribution in the hand. The seventh cervical supplies the rhomboid, pectorales, latissimus dorsi, pronators, and triceps, and supplies sensation to the radial side of the forearm and hand.

The eighth cervical supplies the pronators, pectorales, flexores carpi et digitorum, hand muscles and triceps, and supplies sensation to the forearm and hand, and the ulnar and median areas.

The first dorsal supplies the flexores carpi et digitorum, pectorales and intercostohumerals.

No investigator has been able to divide the tracts in the cord that convey touch, pain or muscle-sense for the reason advanced earlier in the paper, namely, that these tracts are so scattered through the white substance of the cord that to separate them is impossible.

In some cases of intractable pains wherever located, we are obliged to fall back on the generally accepted theory that memory pain is the only possible explanation. In some of the cases cited and reported where pain has continued after an operation we are unable to advance any acceptable theory other than that the sensory cortex or other gray ganglia in the brain is the seat of the pain. A painful impression is permanently lodged in the centers of consciousness.

The following conclusions are for consideration:

1. Old and new chartings of sensory areas are variable and unreliable.
2. Each individual, according to circumstances, has an individual center for pain.
3. The segments in the spinal cord follow no definite order except when gross lesions are present, and even here we may be in error.
4. When the posterior roots are sectioned for pain, it may be necessary to divide more than three, perhaps as many as five roots, to accomplish relief.
5. In some instances, it is advisable to section one-half of several roots, or alternate roots, to abolish or diminish pain and spasm.
6. If this order is followed, there is less likelihood of disagreeable results, such as helplessness from greater or less loss of voluntary control.
7. Allow the patient to come out of the anesthetic and reopen the wound for further root section, in case pain persists.

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7. Petren, Karl: Arch. f. Psychiat. Nervenkrankh., 1910, xlvii.

ABSTRACT OF DISCUSSION

DR. H. N. MOYER, Chicago: In view of the fact that operations have been recommended for root pains and that the symptomatic criteria for operations in these cases are still uncertain, we are indebted to Dr. Jones for a timely discussion of this subject. It is obvious that the difficulty is one of diagnosis; if the section of the root is made peripheral to the lesion, relief cannot be hoped for, and it is the indefiniteness of localization of sensory root lesions that makes an operation of this character uncertain, and should lead us to prefer other methods of relief where possible. During the last six months at the Cook County Hospital we have been treating tabetic root pains by the injection of cacodylate of sodium into the spinal canal, a method proposed by Dr. Heym. During the past six months we have injected upwards of thirty cases. In most of them there has been a prompt relief of pain; in one case of tabes involving the upper segments of the cord, the relief was quite as prompt as in the others in which the tabetic involvement was lower down. No untoward complications have followed the injections. In making them we use the ordinary technic for lumbar puncture, but allow just enough spinal fluid to escape to show that the needle is in the spinal canal.

DR. W. W. GRAVES, St. Louis: I had the privilege of seeing the case reported by Dr. Jones, and was very much interested at the time because of the diagnostic problems involved. The individual had suffered for many years from pain and I unhesitatingly made the diagnosis that Dr. Fry had made before, that this was a case of tabes. This diagnosis was

founded on unusually small and irregular pupils, which did not react well to light, on sensory loss about the legs, about the chest, and a slight sensory loss—at least I found it so—about the outer surface of the arms and in the distribution of the fifth and sixth cervical roots; not any more on the right side, where he had so much pain, than on the left The peculiar problem in the case was that this individual who appeared to suffer from intolerable pain during the day could lie down at night and sleep without narcotics. So that I regarded this pain as partly "attention pain." Perhaps he did have true brachial crises at times; but I believe that which he called pain was not actually pain dependent on a definite lesion, but rather on some sort of a psychical process—undue "attention"—with which we are all familiar in certain cases. The individual was able to sleep and he could be diverted from his pain during the course of the examination. I put the patient to bed, isolated him, diverted him as much as I could from his trouble, gave him large doses of mercury, because he had never had a thorough systematic course of treatment, and he showed very decided improvement. After keeping him under observation for about five or six months, he went to Scotland and he wrote from the steamer that he had not been so free from pain for fifteen years and he expected to return to St. Louis practically well. The pain persisting the way it did after the nerve root section by Dr. Jones seems to me to substantiate the diagnosis that this pain was not due to a definite root lesion.

Now, I should just like to add a word about the application of nerve root sections in spastic states. Last October during the meeting of the German Neurologic Society in Berlin I saw results obtained by Foster's operation and the results achieved along that line are remarkable. In children who had never been able to walk or make any voluntary or purposeful movements with their legs, after relieving the spasticity by root sections and after training, those children were able to get around and get a great deal of use of their legs. As to the use of nerve root section for the relief of pain, I agree with Dr. Moyer that we shall resort to such serious operations less and less as time goes on.

DR. ALBERT ABRAMS, San Francisco: As far as the localization of spinal root pain is concerned, there is one diagnostic point which has afforded me great service, and that is, if one takes the tender points peripheral to the supposed site of the lesion, and manipulates them by traction, pressure, or whatever the process may be, areas of tenderness develop at the vertebral exits of the spinal nerves which are segmentally related to the peripheral areas of sensitiveness, and if the vertebral areas of tenderness are frozen, the pain peripheral to the site of lesion disappears. All the *pointes douloureux* disappear.

Another point is to establish the site of lesion, whether peripheral or central to the exit of the spinal nerve. This fact can be readily determined by freezing; the pain disappearing if the lesion is at, or peripheral to the vertebral exit. Recently, freezing has been recommended for the relief of intractable pains incident to an attack of herpes zoster, and it has been said that there is nothing so specific for this condition. This method I recommended twenty years ago, and I found it in the majority of instances absolutely useless, for the reason that the seat of the lesion is in the spinal ganglia, that is, central to the exit of the spinal nerve roots. If, however, the lesion be at the vertebral exit of the nerve, all the pains are relieved. That is the reason why in tabetic patients we find little or no relief following congelation. Lately I have used injections of anesthetic medicaments at the spinal nerve exits for the purpose of determining whether by this means I could definitely decide whether the seat of the lesion was peripheral or central to the nerve exit. Thus far I have not arrived at any definite conclusion respecting the latter investigation.

DR. E. D. FISHER, New York: A number of cases have been presented before the New York Neurological Society of section of the posterior spinal nerve roots, in cases of spastic paralysis, either of cerebral or of spinal origin by Drs. Taylor, Clark and Ellsburg. Most of these patients have done fairly well. Of course the class that I am now referring to has nothing to do with pain. Some of them have been returned to the society for observation six months or a year and a half afterwards. There is, however, only a limited degree of improvement.

One feature we have to deal with in that class of cases is that there is some mental impairment, and when we try the educational plan in such cases we are not so successful as we might otherwise be. I believe, however, in the operation for these spastic cases, but we must be particular in choosing them. In the conditions of pain I have found that it is more beneficial, as has been suggested, in the peripheral type. Tabetic pains or tabetic conditions, such as the gastric crises, and so on, have not been as successfully treated by these methods as the cases of a peripheral neuritis, and even in that class I would certainly advise all other forms of treatment first.

I will refer to one case, a patient who had spastic hemiplegia, in which the condition was so extreme that he preferred to have his hand removed to the continuance of the spasm. Following the operation neuromas formed on the ends of the nerves. They were removed but again returned. Several operations were performed, until the arm was removed at the shoulder-joint at the third or fourth operation. The pain again returned. The brachial plexus was then removed. The final operation was the section of the posterior spinal nerve root which resulted in permanent recovery, except that at times the man had pains which we thought were psychical rather than actual. This is the position which resection of the posterior nerve roots is in to-day. It seems necessary at times to resect four of the spinal nerve roots if we are to get the results that we wish, or even to get anesthesia following the operation.

PATHOLOGIC FINDINGS IN HYPERTENSION*

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During the last ten years much has been written on the subject of blood-pressure and hypertension. Most of the work has been based on clinical findings; comparatively little has been done in the way of following cases to the autopsy table. There are, of course, grave objections to drawing deductions from a comparative study of blood-pressure determinations taken shortly before death and the pathologic lesions found at autopsy. At the same time it seemed that the study of a group of cases which had been followed to the autopsy table might be of interest.

All observers are agreed in regard to the frequent occurrence of hypertension in nephritis. Cushing[1] and others[2, 3] have shown that high blood-pressure occurs in cases with increased intracranial pressure. The chief discussion has been directed toward the question of the occurrence of hypertension in arteriosclerosis independent of a nephritis. Sawada[4] has never seen a case of hypertension over 170 in simple arteriosclerosis. Romberg[5] considers that persistent high blood-pressure in a suspicious case establishes the diagnosis of chronic interstitial nephritis.

The material reported in this paper consists of the pathologic findings in every case showing a systolic blood-pressure of over 160 in life which has come to

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Cushing, H.: Bull. Johns Hopkins Hosp., 1901, xii, 290.
2. Eyster, Burrows and Essick: Jour. Exper. Med., 1909, xi, 489.
3. Robinson, G. C.: Arch. Int. Med., May, 1910, v, 483.
4. Sawada: Deutsch. med. Wchnschr., 1904, xxx, 425.
5. Romberg: Kong. f. inn. Med., 1904, lx, 17.

PATHOLOGIC FINDINGS IN FIFTY-THREE CASES OF HYPERTENSION

Number	Autopsy No.	Sex	Age	Systolic Blood-Pressure: Maximum	Systolic Blood-Pressure: Minimum	Number of Determinations	Period of Observations	Heart Wt. (gm.)	Combined Kidney Wt. (gm.)	Albumin	Casts	Average Specific Gravity	Chronic Passive Congestion	Edema	Clinical Diagnosis	Anatomical Diagnosis
1	1851	M.	46	185	170	2	5 weeks.	455	123	V. S. T.	Many.....	1010	0	0	Chronic nephritis; arteriosclerosis.....	Chronic interstit. neph.; arteriosclerosis.
2	1854	M.	39	210	...	1	5 days..	740	200	S. T....	None.....	1007	0	0	Chronic nephritis; arteriosclerosis; uremia	Chronic interstitial nephritis.
3	1996	M.	65	200	200	3	16 days..	630	187	S. T....	Occasional.	1016	0	0	Chronic nephritis; arteriosclerosis.....	Chronic interstit. neph.; arteriosclerosis.
4	2016	M.	39	215	190	2	19 days..	491	212	S. T....	Few.....	1010	0	0	Chronic nephritis; uremia.....	Chronic glomerulo-neph.; arteriosclerosis.
5	2027	F.	43	225	225	2	14 days..	447	215	S. T....	Numerous.	1014	0	0	Cerebral hemorrhage; cardiorenal disease.	Cerebral hemorrhage; arteriosclerosis; arteriosclerotic nephritis.
6	2050	M.	46	190	...	1	8 days..	541	319	S. T...	Occasional.	1018	+	+	Chronic nephritis; alcoholism.....	Subacute glomerulo-nephritis; verrucose endocarditis; aortic and mitral valves.
7	2058	M.	68	165	135	13	13 weeks.	390	272	S. P. T.	Numerous.	1019	+	+	Stokes-Adams disease.....	Arteriosclerosis; chronic interstitial nephritis; calcification bundle His; fibrocalcareous endocarditis aortic valve.
8	2062	M.	42	105	...	1	19 days..	...	...	L. T....	Few.....	1013	0	0	Pyonephrosis; renal calculus; uremia...	Pyonephrosis; renal calculi; chronic glomerulo-nephritis.
9	2066	M.	49	185	...	1	24 days..	423	313	S. P. T.	Few.....	1014	0	0	Plumbism; lobar pneumonia.....	Arteriosclerosis; slight lobar pneumonia; chronic interstitial hepatitis (slight); arteriosclerotic nephritis (slight).
10	2086	M.	30	200	140	3	9 weeks.	520	300	T.	Many.....	1024	+	+	Intra-cardiac thrombosis	Intracardiac thrombosis.
11	2132	M.	73	200	...	1	1 day...	370	120	.....	.....	....	0	0	Arteriosclerosis; chronic nephritis.....	Arteriosclerosis; aneurysm of aorta; chronic interstitial nephritis.
12	2175	F.	45	225	190	3	2 weeks.	363	122	T.	Rare.....	1008	+	0	Chronic glomerulo-nephritis; uremia....	Chronic glomerulo-nephritis; slight arteriosclerosis.
13	2200	F.	72	225	185	5	10 days..	527	121	S. T....	Numerous.	1012	+	+	Chronic contracted kidney.....	Arteriosclerosis; chronic interstitial nephritis.
14	2256	F.	45	230	205	5	24 days..	586	270	0.1%	Occasional.	1016	0	0	Chronic interstitial nephritis; uremia...	Chronic interstitial nephritis; arteriosclerosis.
15	2270	M.	65	200	185	3	2 weeks.	612	134	L. T....	Occasional.	1011	0	0	Chronic nephritis	Chronic interstitial nephritis; arteriosclerosis.
16	2272	M.	35	175	...	1	1 day...	365	342	O	O	....	0	0	Traumatic cerebral hemorrrhage.....	Traumatic cerebral hemorrhage; traumatic cysts of softening of brain.
17	2296	M.	51	210	95	2	3 days..	725	199	S. T....	Numerous.	1007	0	0	Chronic interstitial nephritis; arteriosclerosis; uremia.	Chronic interstitial nephritis; arteriosclerosis; small apoplectic cyst of brain.
18	2321	M.	54	200	255	2	10 days..	740	285	S. T....	Few.....	1005	+	0	Chronic interstitial nephritis.....	Chronic glomerulo-nephritis; slight arteriosclerosis.
19	2340	F.	35	205	...	1	4 weeks.	515	210	T.	Rare.....	1007	+	+	Cardio-renal disease	Chronic glomerulo-nephritis.
20	2365	F.	41	255	240	5	9 days..	490	200	¼%	Many.....	1013	+	0	Chronic glomerulo-nephritis	Chronic glomerulo-nephritis; slight arteriosclerosis.
21	2396	M.	52	200	...	1	4 days..	598	307	S. T....	Few.....	....	0	0	Cerebral hemorrhage; arteriosclerosis; myocarditis.	Arteriosclerosis; cerebral hemorrhage.
22	2449	F.	40	240	...	1	1 day...	440	288	T.	O	1014	+	0	Cerebral hemorrhage; chronic nephritis.	Hemorrhage of brain (spontaneous); cerebral arteriosclerosis.
23	2495	F.	59	225	...	1	6 days..	525	215	S. T....	Few.....	1007	0	0	Aortic disease; chronic nephritis.....	Chronic endocarditis of aortic and mitral valves; arteriosclerosis; acute degeneration of kidneys.
24	2506	M.	43	220	200	10	10 days..	467	140	L. T....	Numerous.	1007	+	0	Chronic glomerulo-nephritis	Chronic nephritis; arteriosclerosis.
25	2534	M.	49	165	130	7	24 days..	670	362	S. T....	Occasional.	1010	+	+	Chronic interstitial nephritis.....	Syphilitic aortitis; fibrinous endocarditis of aortic and mitral valves.
26	2542	F.	52	210	205	2	8 days..	602	449	S. T....	Few.....	1020	+	0	Cardio-renal disease; cirrhosis of liver.	Arteriosclerosis; chronic interstitial; hepatitis; acute glomerulo-nephritis.
27	2550	M.	30	205	145	6	2 weeks.	1273†	484	T.	Numerous.	1020	+	+	Chronic endocarditis mitral and aortic valves; acute endocarditis.	Chronic adhesive pericarditis; chronic verrucose endocarditis of mitral aortic valves; subacute glomerulo-nephritis.
28	2560	M.	59	190	163	2	9 days..	720	205	V. S. T.	Rare.....	1008	+	0	Chronic interstitial nephritis; uremia; arteriosclerosis.	Chronic glomerulo-nephritis; arteriosclerotic nephritis; arteriosclerosis.
29	2565	M.	44	230	205	3	10 mos...	680	193	T.	Rare.....	1009	+	+	Glomerulo-nephritis	Chronic nephritis; arteriosclerosis.
30	2566	M.	71	175	...	1	16 days..	412	202	S. P. T.	O	....	+	0	Contracted kidneys; myocarditis.....	Arteriosclerosis; hydronephrosis; fibrocalcareous endocarditis of aortic and mitral valves.
31	2579	F.	37	165	...	1	5 days..	223	208	T.	O	1012	0	0	Miliary tuberculosis	General miliary tuberculosis; tuberculous meningitis.
32	2611	M.	66	190	150	7	7 days..	343	232	O	Rare.....	1017	+	0	Arteriosclerosis; arteriosclerotic nephritis	Subacute glomerulo-nephritis; arteriosclerosis.
33	2624	F.	47	190	125	3	4 days..	...	...	V. S. T.	O	1020	0	0	Brain tumor	Angioma of brain.
34	2634	F.	55	200	160	5	7 days..	567	120	T.	Numerous.	1017	+	+	Chronic nephritis	Chronic nephritis; arteriosclerosis.

PATHOLOGIC FINDINGS IN FIFTY-THREE CASES OF HYPERTENSION—Continued

35	2667	M.	67	165	150	2	5 days..	620	189	S. P. T.	Rare.....	1005	+	0	Chronic interstitial nephritis; arteriosclerosis.	Arteriosclerotic nephritis; arteriosclerosis; foci of interstitial myocarditis; fibrocalcareous endocarditis aortic valve.
36	2670	M.	25	205	160	25	32 days..	615	170	T.	Many.....	1008	++	++	Chronic glomerulo-nephritis; uremia....	Chronic glomerulo-nephritis.
37	2676	M.	40	215	140	70	11 weeks.	530	235	½%	Many.....	1010	++	++	Chronic glomerulo-nephritis	Chron. glomerulonephritis; arteriosclerosis; myomalacia wall left ventricle.
38	2682	M.	49	240	185	3	5 days..	358	310	S. T....	Many.....	1010	+++	++	Chronic glomerulo-nephritis	Subacute glomerulo-nephritis.
39	2686	M.	44	240	140	7	7 days..	330	257	0.1%	O	1012	+++	++	Chronic diffuse nephritis.....	Arteriosclerotic nephritis; arteriosclerosis.
40	2694	M.	35	250	135	120	4.5 mos.	355	131	T.	Many.....	1010	+	0	Chronic glomerulo-nephritis	Chronic glomerulo-nephritis; arteriosclerosis (slight).
41	2714	M.	66	200	135	5	10 days..	530	480	L. T....	Many.....	1024	0	0	Alcoholism; chronic nephritis.....	Arteriosclerosis; fatty infiltration of myocard.; fibrous endocarditis aortic valve.
42	2717	F.	30	195	...	1	Few hrs..	...	200	T.	Few.....	1009	0	0	Chronic glomerulo-nephritis	Chronic glomerulo-nephritis.
43	2727	F.	43	175	155	4	21 days..	357	550	S. P. T.	O	1015	0	0	Polio-encephalitis	Carcinoma of ovaries with metastases in kidneys; degeneration in pons.
44	2730	M.	52	170	133	6	21 days..	625	310	L. T....	Many.....	1017	++	+	Arteriosclerosis	Cardiac thrombosis.
45	2745	M.	68	210	170	22	5 mos...	728	253	T.	Occasional.	1020	+	0	Arteriosclerosis; arteriosclerosis of aorta.	Arteriosclerosis; slight fibrous endocarditis of aortic and mitral valves; mural cardiac thrombi.
46	2761	F.	60	210	...	1	1 day...	520	268		O	1014	+	+	Chronic glomerulo-nephritis; uremia....	Slight arteriosclerosis; glycosuria.
47	2765	M.	73	185	130	6	6 mos...	450	290		O	1016	+	0	Pernicious anemia	Arteriosclerosis; pern. anemia; fatty degen. of myocard.; fibrous endocarditis of aortic, mitral and tricuspid valves.
48	2769	M.	70	200	125	3	3 days..	335	190	V. S. T.	Numerous.	1008	0	0	Cerebral hemorrhage	Arteriosclerosis; cerebral hemorrhage.
49	2773	F.	53	170	...	1	9 days..	310	146	T.	O	1008	0	0	Stokes-Adams disease; renal calculus...	Arteriosclerotic nephritis with calcium oxyiate deposits in tubules and cortex.
50	2808	M.	61	170	...	1	4 days..	325	145	0.1%	Few.....	1017	0	0	Arteriosclerosis	Chronic interstitial nephritis; arteriosclerosis.
51	2809	M.	42	250	210	30	5.5 wks.	535	230	T.	Many.....	1010	+	0	Chronic glomerulo-nephritis	Chronic interstitial nephritis (atrophic kidneys); arteriosclerosis.
52	2819	M.	52	165	135	4	23 days..	588	335	T.	Many.....	1017	+	+	Aortic stenosis and regurgitation.....	Fibrous endocarditis of aortic and mitral valves; slight arteriosclerosis.
53	2822	F.	43	230	210	5	10 days..	465	276	T.	Many.....	1011	+	+	Chronic glomerulo-nephritis	Chronic glomerulo-nephritis.

* T., trace; S. T., slight trace; V. S. T., very slight trace; S. P. T., slightest possible trace; L. T., large trace. O, negative. † With pericardium.

autopsy from the medical wards at the Massachusetts General Hospital from Jan. 1, 1907, to April 25, 1911. Before 1907 the blood-pressure determinations were not made in sufficient numbers to give adequate data. Since 1907, while blood-pressure determinations have not been used as a routine in every case at the Massachusetts General Hospital, yet it is fair to say that such determinations have been made in nearly every case, if not every case, that would come into the group under discussion.

Unfortunately, only the determinations of the systolic blood-pressure are available. The instrument used has been the Riva-Rocci apparatus with the wide armcuff. The observations were all taken in the recumbent position when the patient was able to lie down. The apparatus was placed on a table practically on a level with the heart, with the arm at the same level. The determinations were made by various individuals, but in general the method was that advocated by Janeway[6] and Sawada[4]; namely, the point at which the first full beat returns after the obliteration of the pulse. Janeway and Park[7] have shown that in clinical blood-pressure determinations, if the wide arm-piece be used and if the return of the first fully developed pulse-wave be taken, even advanced arterial thickening and calcification probably do not intrude an error of any importance.

The limit of 160 was taken, as Janeway[6, 8] and others[9, 10] believe that such a limit is rarely exceeded in normal individuals. From Jan. 1, 1907, to April 25, 1911, there were in the medical wards of the Massachusetts General Hospital fifty-three cases with blood-pressures over 160 that came to autopsy. The hospital admits only acute cases or acute manifestations of chronic cases. Most of the autopsies were done by Dr. Oscar Richardson; a few by Dr. J. H. Wright. The histologic examinations were made by Dr. Wright.

In the discussion of the diagnosis, little attempt has been made to balance the relative importance of the pathologic findings. If a kidney lesion of any description is present, it is considered that such a case belongs to the group of cases of hypertension associated with kidney lesions.

HYPERTENSION WITH LESIONS IN THE KIDNEYS

The pathologic findings showed some kidney lesion in thirty-eight cases, or over 71 per cent. These thirty-eight cases include one case which was, pathologically, acute degeneration of the kidneys and one case of hydronephrosis. In seven of the thirty-eight cases showing kidney lesions, or 13 per cent. of the whole series, the lesions found at autopsy were essentially confined to the kidneys (Cases 2, 8, 19, 36, 38, 42 and 53). Five of these seven cases showed pathologic changes classified as chronic glomerulonephritis, one as subacute glomerulonephritis and one as chronic interstitial nephritis. The maximum systolic blood-pressure in this group of seven cases ranged from 165 to 240.

HYPERTENSION WITH ARTERIOSCLEROSIS

Arteriosclerosis was found at autopsy in thirty-seven of the fifty-three cases, or 69 per cent. General arteriosclerosis was associated with lesions in the kidney in twenty-eight cases, or 52 per cent.

There was only one case (Case 46) of hypertension with arteriosclerosis in which there was no kidney lesion,

6. Janeway, T. C.: Clinical Studies of Blood-Pressure, New York, 1904, p. 64.
7. Janeway and Park: Arch. Int. Med., Nov. 15, 1910, vi, 586.
8. Janeway, T. C.: Am. Jour. Med. Sc., 1906, i, 772.
9. Osler: System of Medicine, iv, Chap. x, 426, 447.
10. Woley: THE JOURNAL A. M. A., July 9, 1910, p. 121.

no cerebral lesion and no cardiac lesion, except simple hypertrophy and dilatation, the blood-pressure was 210. This case was in the hospital only twenty-four hours, and there was only one observation of blood-pressure. The patient was in coma. The urine showed no albumin but a slight trace of sugar. The pathologic examination showed a woman of 60 years, with slight general arteriosclerosis, a heart weighing 520 gm., normal kidneys weighing 268 gm. and no other lesions worthy of note.

In two cases (Cases 41 and 47) of fibrous endocarditis with no lesions in the kidneys, the valvular lesions were slight and the essential pathologic change seemed to be arteriosclerosis.

HYPERTENSION WITH CEREBRAL LESIONS

In eight of the fifty-three cases, or 15 per cent., there were definite cerebral lesions. One case was associated with a chronic nephritis and three with arteriosclerosis. In four cases no other blood-pressure-raising factor besides the cerebral lesion was apparent.

HYPERTENSION WITH CARDIAC LESIONS

In thirteen of the fifty-three, or over 24 per cent., there were definite cardiac lesions in addition to simple hypertrophy and dilatation of the heart, and in eleven of these thirteen there was endocarditis of the aortic valve. In every case in which the endocardium was affected, the aortic valve was involved. Three of the thirteen cases showed no other lesions which might be assumed to raise the blood-pressure.

HYPERTENSION WITHOUT KIDNEY LESIONS

There were fifteen cases, or 28 per cent. of the series, in which no kidney lesions were found; at autopsy seven showed cerebral lesions. In four cases the chief pathologic lesion was cerebral hemorrhage. The blood-pressure varied in these four cases from 175 to 260. In one case (Case 16) the cerebral hemorrhage was traumatic; in that case the blood-pressure was 175. In the other three cases (Cases 21, 22 and 48) the cerebral hemorrhage was apparently due to the rupture of an arteriosclerotic cerebral vessel. In these three cases, the blood-pressures were over 200. In the same group is one case of brain tumor (Case 33) with a blood-pressure of 190; one case of degeneration in the pons (Case 43) with a blood-pressure of 175, and one case of miliary tuberculosis with a tuberculous meningitis (Case 31) with a blood-pressure of 165. Consequently, in seven out of fifteen cases of hypertension not associated with a lesion in the kidney, there was some cerebral condition which might have caused cerebral pressure. Cushing and others have shown the relation between increased intracranial pressure and an increased blood-pressure.

In this group of fifteen cases of hypertension without kidney lesions, seven showed cardiac lesions. There were two cases (Cases 10 and 44) in which intracardiac thromboses were found without other cardiac lesions beyond simple hypertrophy and dilatation and without arteriosclerosis. There was one case of syphilitic aortitis (Case 25) with a slight amount of fibrous endocarditis of the aortic valve. In addition, one finds in this group four cases (Cases 41, 45, 47 and 52) of fibrous endocarditis of one or more valves of the heart, all associated with arteriosclerosis and one case with primary pernicious anemia. The aortic valve was affected in every case. In the same group of fifteen cases of hypertension without kidney lesions comes the case of arteriosclerosis (Case 46). In this group of fifteen cases of hypertension without lesion in the kidneys there were seven patients under 50 and eight over 50 years. The maximum systolic blood-pressure varied from 165 to 260.

HYPERTENSION WITHOUT LESIONS IN THE KIDNEYS AND WITHOUT ARTERIOSCLEROSIS

There were seven cases with neither arteriosclerosis nor nephritis. Of these seven cases four showed cerebral lesions. One was a case of brain tumor (Case 33), one was a case of general miliary tuberculosis with tuberculous meningitis (Case 31), one a case of degeneration in the pons and carcinoma of the ovary (Case 43), one a case of cerebral hemorrhage due to trauma (Case 16). The remaining three cases in this group were cardiac cases (Cases 10, 25 and 44). The ages in this group were from 30 to 52. This group of seven cases is characterized by a moderate degree of hypertension as a rule, two showing a maximum systolic blood-pressure of 165, one of 170, two of 175, one of 190 and one of 200. Therefore, in this series of fifty-three cases in the absence of both arteriosclerosis and any lesion in the kidney no blood-pressure over 200 was found.

If one considers only the cases with more than one blood-pressure observation and only cases showing constantly a blood-pressure of 200 or over there were ten cases all of which were cases with kidney lesions. In nine of these ten cases arteriosclerosis was also present, although in two cases the arteriosclerosis was slight.

Of fifty-one cases in which we have the kidney weight twenty-nine, or 56 per cent. +, were distinctly atrophic i. e., weighing under 250 gm. Of the twenty-nine kidneys weighing less than 250 gm. twenty-seven showed kidney lesions and two showed no kidney lesions. One case (Case 31) showed miliary tuberculosis in which the blood-pressure was 165. In this case the kidneys weighed 208 gm. but the heart also was small, weighing 223 gm. The other (Case 48) showed arteriosclerosis and cerebral hemorrhage. The blood-pressure varied between 260 and 125. The heart weight was 335 gm. and the kidneys 190 gm. Only eleven cases of the thirty-seven with kidney lesions, or 27 per cent., failed to show small atrophic kidneys. Of the ten cases with kidney lesions, with kidneys weighing more than 250 gm., five showed kidneys weighing 250 to 300. Histologically, all showed atrophic conditions. In one case, with kidneys weighing 313 gm., the chronic interstitial changes were slight (Case 9). This was the case of lead poisoning and pneumonia. Three of the other four cases were cases of subacute glomerulonephritis and the other was a case of acute glomerulonephritis. In seven of these ten cases the blood-pressure was over 200 mm. of mercury. Marked hypertension occurs in this series in a certain number of cases in association with kidneys which are not atrophic, and in acute and subacute glomerulonephritis.

The weights of the hearts were of considerable interest; of the fifty-one cases in which the heart weights were recorded only thirteen weighed less than 400 gm., ten weighed between 400 and 500, and twenty-nine, or 56 per cent., weighed over 500 gm. Of special interest is Case 48, in which the heart weighed 335 gm. In this case a blood-pressure of 260 was present for twenty-four hours, of 180 the next twenty-four hours, but the pressure sank to 125 on the third day, the day of death. Case 12 was observed for two weeks, with three observations scattered through the period. The blood-pressure varied between 225 and 190. The heart weighed 363 gm. Consequently, a high blood-pressure of over 190 may

persist for a period of days with only a very moderately hypertrophied heart.

The anatomic and clinical diagnoses approximately correspond in forty-four of the fifty-three cases. In five cases (7, 9, 27, 49 and 50) kidney lesions were found at autopsy, but were not diagnosed in life. In one of these five cases (Case 9), one of lead poisoning with lobar pneumonia, the kidney lesion was slight. In two cases (7 and 27) the nephritis seemed incidental. In five cases (22, 25, 30, 41 and 46) a kidney lesion was diagnosed but was not found at autopsy. This diagnosis was, apparently, based chiefly on the high blood-pressure.

In these fifty-three cases albumin was absent in only four; in three of these four there was no kidney lesion. In these four cases the clinical diagnosis of nephritis was made twice and in one the kidney lesion was present and in one a kidney lesion was not present at autopsy.

Of the fifty-three subjects thirty-six were males and seventeen females. The males predominate over two to one. In the ten-year periods there were one from 20 to 29, nine from 30 to 39, nineteen from 40 to 49, ten from 50 to 59, nine from 60 to 69, five from 70 to 79 and one subject of unknown age.

The age period of from 40 to 49 has nearly twice as many as any other period. From 40 to 59 are twenty-nine cases, or 54 per cent., of all the cases. The youngest patient was 25, the oldest 73.

SUMMARY

Some kidney lesion was present at autopsy in over 71 per cent. of the cases of hypertension. In 13 per cent. the kidney lesion was essentially uncomplicated by other possible blood-pressure-raising factors; the lesion in the kidney was atrophic in 72 per cent. of the kidney cases. Hypertension also occurs in the so-called acute and subacute glomerulonephritis as well as in the atrophic form of nephritis. Arteriosclerosis was present in 69 per cent. of the cases, but in only one case could all other lesions which might cause hypertension be excluded.

In fifteen cases no kidney lesion was found at autopsy. Seven of these cases presented cerebral lesions, seven cardiac lesions and one general arteriosclerosis. In every case of valvular disease of the heart, the aortic valve was involved. No patient without either nephritis or arteriosclerosis showed a blood-pressure of over 200. All the patients with repeated and constant blood-pressure readings of over 200 showed some kidney lesion.

In thirty-eight of the fifty-one cases there were definitely hypertrophied hearts, yet in some instances high blood-pressures were observed to persist for days with hearts weighing less than 400 gm.

The following conclusions seem justified:

Hypertension occurs most commonly in association with some lesion in the kidney. The most common lesion is an atrophic kidney with increase of connective tissue and disappearance of glomeruli. Hypertension occurs also in association with acute, subacute and chronic glomerulonephritis.

Hypertension occurs not infrequently in association with cerebral lesions.

A moderate degree of hypertension may occur in cardiac lesions. In valvular cardiac lesions the aortic valve is apparently always involved.

Hypertension may occur rarely in cases of general arteriosclerosis without other lesions.

With a continued systolic blood-pressure of over 200, some form of nephritis is found.

Hypertension usually indicates well-marked cardiac hypertrophy. The hypertrophy may be moderate in connection with a well-marked hypertension over a considerable period.

NOTE.—In addition to the authorities previously cited, the following may be found of interest:

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ABSTRACT OF DISCUSSION

DR. WILLIAM OPHÜLS, San Francisco: I was much interested in Dr. Lee's paper, because lately I have been working on the same question, but from an anatomic point of view. I should refer those of you who are interested to the Scientific Exhibit, where some microphotographs and charts are exhibited, which show the result of an investigation of kidneys, heart and blood-vessels in 1,000 consecutive autopsies. As is shown in these charts, general arteriosclerosis and the so-called small granular kidney are closely associated. Glomerulonephritis proper, however, can be distinctly separated from these primarily arteriosclerotic cases.

Dr. Lee's clinical observations bear out very closely what I have seen anatomically. In regard to hypertension I am inclined to place more importance on general arteriosclerosis than on the renal lesions which may be associated. I was quite astonished myself, in looking over my cases, to learn how comparatively insignificant the renal lesions are in producing the symptom-complex. Undoubtedly at present the rôle of the kidneys in its production is greatly exaggerated.

DR. EDWARD F. WELLS, Chicago: There is an art, as well as a science, in the study of blood-pressure, and the art, to be useful, requires practice. He who measures the blood-pressure rarely and in the exceptional case and attempts to draw conclusions from his occasional observations, places himself in the position of one who would form his opinions on the pulse under similar circumstances; both would obtain very indefinite and obscure impressions of the great variations in the characteristics of the blood-pressure and pulse, respectively, and would underestimate the value of the procedure. He, however, who measures the blood-pressure as a diagnostic routine procedure obtains useful and pertinent information.

The blood-pressure which rises gradually through a long period of time and is accompanied by cardiovascular and nephritic morbid changes, is probably fundamental and permanent, and is one which cannot be materially reduced, and it may be questioned whether this should be attempted. There is, however, an exalted blood-pressure which attends certain toxic conditions, as, for example, the toxemia of pregnancy, which results in eclampsia, in which the blood-pressure may rapidly rise to great heights. Although we do not yet know fully the relations of the blood-pressure to the toxic agent in these cases, nevertheless we are justified in regarding it as due to the rapid introduction into the circulating liquids of a powerful toxin which acts with intense energy on the vasomotor nerves. Such high blood-pressures quickly fall on removal of the offending cause; they are clearly functional. Now in the class of cases first alluded to, there may be added to the ordinary high blood-pressure of the individual a more or less rapidly advancing increase in tension, due to some ephemeral toxemia, and which may disappear with celerity when once the extra burden is removed, leaving the blood-pressure at the usual high level for the individual, but the reduction is not materially lower than is habitual for the patient. It is my belief that the recognition of these facts is of practical importance, first, to the patient's welfare, and second, to the fair fame of medicine.

DR. FRANK BILLINGS, Chicago: What has been said regarding cardiovascular changes, agrees with the statement already made that the cardiovascular or vascular changes with the hypertrophy of the heart are very important things to consider in blood-pressures. Sometimes in our ignorance the elevation in the blood-pressure is ascribed to a toxemia; there seems to be nothing else which will describe it. However, toxemia has been recognized in many other conditions in which there is an increase of blood-pressure; some vasomotor process such as is exemplified in the phenomena which appear in hyperthyroidism. In the early stages of this disease there is a blood-pressure of 180 or 200, and this is before the disease has progressed to changes in the cardiovascular system. This must be the result of a toxemia, something which produces overfull blood-vessels. As Dr. Wells stated in relation to the management of such conditions, the existence of a permanent blood-pressure is in a sense conservative; it is Nature's method.

We must consider hydrostatic pressure, but there is another condition, toxemia, which we must not neglect. I agree with Dr. Lee that there are many other things that cause hypertension, such as cardiovascular changes and other changes referable to the kidney. I have watched many cases in the clinics, many that have gone to autopsy; I have seen patients suffering from toxemia without apparently any cardiovascular changes; but at autopsy the kidneys were found to be practically worthless, or functionless.

Just one other word. I do not believe that we can say definitely that there is an exact dividing line between the pathologic and the normal in these cases. To say that 160 is the limit of health, or the point at which disease begins, I think is wrong. There are people of the very nervous type who, under certain conditions, such as overwork, worry, and the like, run up the point to 160, 170 or 180, even, and here we find associated the toxemia that goes with fatigue. When these people are treated with ordinary hygienic measures there is a lessening in the blood-pressure. I do not believe that we have any right to have a statement go forth that a blood-pressure of 160 or more really means, necessarily, disease.

DR. C. F. HOOVER, Cleveland: For the past few years I have studied the diastolic arterial pressure in all suspected cases of hyperthyroidism and I have yet to find a patient in whom there is an elevation of the diastolic pressure even when the systolic pressure is high. My attention was attracted to this point by cases with cardiovascular disease being referred to the surgical wards for operation on goiter which these patients happened to have. The goiters in such cases were merely incidental and were not the cause of the cardiac symptoms.

DR. CHARLES L. GREENE, St. Paul, Minn.: With respect to the findings in these cases of aortic lesions, in the cases that have been so ably described by the reader of the paper, if the cases were in fact aortic regurgitation, then what has been presented should not be included among the high-pressure cases. The experience of all of us who are doing this sort of work shows that we may get a very high systolic pressure, but for different reasons, as described by Dr. Hoover. With the Corrigan pulse we may find a high systolic pressure and a very low diastolic pressure.

DR. WALTER L. BIERRING, Des Moines, Iowa: I should like to ask the reader of the paper if any histologic examination of the brachial artery was made and compared with the condition of the other arteries in the body. It has become recognized that marked differences often exist in the pressure in the brachial and the femoral arteries, and it would be interesting to know if local changes in the blood-vessels could account for this difference.

In determining arterial pressure by the simpler method of palpation, it has also seemed to me far more satisfactory to palpate the femoral artery rather than the radial or the brachial, and by comparative tests one can make much closer estimates in this way with the findings of different forms of special apparatus used for this purpose.

DR. ROGER I. LEE, Boston: Only a macroscopic examination of the adrenals was made in these cases. No gross lesions were found.

Among these cases was one of syphilitic aortitis. The spirochetes were found in the walls of the aorta. Two or three other patients gave a history of syphilis.

Only rarely were histologic examinations of the blood-vessels made. The brachial artery was the one used, as a rule to ascertain the blood-pressure. The femoral artery was occasionally employed, but merely as a control for the brachial artery. But in the synopsis the conclusions were drawn from the results obtained from the brachial artery.

I agree with Dr. Billings in regard to setting a limit, or trying to set a limit between what is pathologic and what is normal; the limit of 160 was merely taken because we wanted some limit and 160 is generally regarded as being a fairly good dividing line. It is evident that the diastolic blood-pressure may be very variable in these cases; a further study will result, no doubt, in more satisfactory conclusions.

The cases studied include only one case of frank aortic regurgitation, and one case of aortic stenosis.

The primary purpose of my paper was to find out how great a rôle arteriosclerosis played in hypertension, inasmuch as the German schools have insisted on the close relation between hypertension and kidney lesions. It should be remembered that kidney lesions, however slight, may be sufficient to cause a high blood-pressure. It is certainly very difficult to balance the relative importance of the different lesions. One must think of the so-called latent nephritis, a name applied by the Germans. In this study I classified all cases having any kidney lesions under the head of hypertension associated with kidney lesions.

Another reason for my undertaking this study was that I wished to place hypertension on an anatomic basis so far as possible. While as yet few cases of hypertension have been recorded as the result of a toxemia, it is certain that soon many will be. Barker has reported a case of transitory high blood-pressure in a case of tabes with gastric crises. These cases must be carefully studied, especially in regard to the condition of the heart, kidneys and blood-vessels.

RESERVE RENAL CAPACITY IN CHRONIC INTERSTITIAL NEPHRITIS *

EDWARD F. WELLS, M.D.
CHICAGO

In the mid-course of chronic interstitial nephritis, with the secreting structures of the kidneys greatly reduced by degenerative and atrophic processes, more or less marked renal insufficiency is the rule. With the high-pressure circulatory balance well maintained, the urinary water flows in full or increased volume, the insufficiency being confined to an inadequate excretion of certain waste and superfluous determinable and occult substances which are deleterious to the human body, and which are ordinarily efficiently removed by healthy kidneys. It is probable that the most toxic and important of these are, as yet, demonstrable only by their effects. In the future, when methods shall have been perfected whereby these may be differentiated and measured, our problem will be susceptible of ready and accurate solution. For the present, and for our practical purposes, we are compelled to rely on the amount of urea, chlorids, phosphates and sulphates contained in the daily urine, together with the general and special symptoms, in forming an estimate of renal capacity. Notwithstanding the difficulties and inaccuracies attending such estimates under current conditions, it is my opinion, based on a fairly long and broad experience, that they are of sufficient diagnostic and prognostic importance to warrant their employment in the routine of general practice.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

Many years ago I attended a man who was known to have had chronic interstitial nephritis for more than twenty years, during the latter of these accompanied by frequent and at times very severe attacks of uremia. For several years fairly full analyses of the urine were made once or twice a week, and at times daily for periods of from two to six months. These analyses showed the total solids and urea uniformly greatly reduced, the latter ranging from 3 to 12 gm. per day, with 8 gm. as an approximate average. At one time the daily excretions of urea averaged about 5 or 6 gm. over a period of several weeks, at the end of which the patient had a severe attack of uremia with most active maniacal excitement. During twenty-four hours of violent muscular exertion he passed urine which contained 36 gm. of urea. Following this observation it was noted that active, and to a lesser degree passive, muscular exercise regularly increased the excretion of urea, and approximately a like amount of such exercise always augmented the urea excretions to a corresponding degree; that is, up to from 10 to 12 gm. Later it was experimentally demonstrated that if lean meats were added to the diet, the urea excretion was further increased according to the amount of proteid ingested, up to 15 or 20 gm. This required about 300 gm. of meat. In this case it was clearly evident that beyond this proteid intake the urea output lagged behind. For reasons not material to our theme these observations, so far as the giving of meats was concerned, were omitted, but the employment of active and passive muscular exercises were continued with satisfactory results as an important feature of management. In this case the conclusion to which I had come, and which was shared by other physicians, namely, that the secreting structure of the kidneys were so largely destroyed as greatly to reduce the renal functional capacity, using the urea output as a measure, to far below the requirements of the system, and with a practical abolition of any reserve capacity, was demonstrably erroneous.

During the past ten years I have had frequent opportunities to pursue these investigations, with the result that a sufficient array of facts has been accumulated to warrant the deduction that, in the class of cases under discussion, the kidneys are seldom anatomically or functionally altered to such degrees as to preclude the moderate regular excretion of water, urea, chlorids, and other of the measurable constituents of the urine, and, on occasions of great and extraordinary stimulation, to show evidence of correspondingly increased functional activity, which may, with propriety, be termed reserve renal capacity. That this is an important fact, capable of being turned to diagnostic, prognostic and therapeutic usefulness, must be clearly evident.

In investigating the capacity of the kidneys in chronic interstitial nephritis under the ordinary conditions of life, and under those entailing extraordinary stress on all the organs engaged in the production and excretion of the urinary constituents, various procedures may be adopted, varying with the character of the information desired, and, it may well be added, with the predilections of the physician.

The conditions under which the excretion of urinary water may vary are so fully dealt with in the literature that only a few points of practical importance will be considered: As is well known the urine is, as a rule, notably increased in quantity, with a very considerable proportional and total reduction of the urea and other solids. Should the volume of urine decline, without a corresponding reduction of liquid intake, further examination will disclose circulatory failure with occult or manifest edema. Much later, when there is added to the above high color and increased or even largely increased total urea excretion, cellular nutritive balance with destructive metamorphosis will be present. Observation will soon show that at neither the highest nor lowest output of urinary water does the excretion of urea and other solids reach the highest level; but rather is this found at some intermediate point, which, because of its therapeutic importance, should be, from time to time, closely determined.

During the recently passed years the excretion of chlorids has been very closely studied, and I have only a word to add in this connection, namely, that as a foundation for any dietetic directions which intelligently consider this question, there should be a fairly accurate determination of the chlorid excretory capacity of the kidneys. The methods may be readily adapted.

In the present state of our knowledge in chronic interstitial nephritis, and in connection with our theme, greatest interest lies in estimating, comparatively and absolutely, the excretory capacity of the kidneys for those nitrogenous substances resulting from proteid metabolism of which urea is the chief and best known.

For the purpose of obtaining information as to the renal capacity, I am in my own practice accustomed to employ the following procedures:

The daily urine is examined closely, and recorded and charted every day during the entire time occupied in making the observations, which is divided into a series of periods of three days each. During the first of these the patient is under his accustomed diet and regimen. During the second he takes two freshly made pills of mercurial mass every night, followed by a saline cathartic next morning. In the third the diet is restricted to water, cream and water soups and thin gruels, all in moderate or small quantities, with physical rest. During the fourth he has added to his diet breads, rice and potatoes, the food having a daily caloric value to meet fully nutritional requirements. To this there is added 300 gm. of lean meat during each of the three days of the fifth period; 400 gm. in those of the sixth; 500 gm. in those of the seventh; 600 gm. in those of the eighth. If desirable, the series with increasing amounts of proteid intake may be further extended if required.

In giving the meats in this gradually ascending scale, it will be noted that during the earlier periods the urea excretion rises directly as to the proteid ingestion. As the scale ascends, however, there comes a time in which ingestion of proteids and excretion of urea no longer run parallel, the latter lagging behind; later this becomes so marked that I prefer to terminate the investigation.

Applying the rule of averages, to which no chronic interstitial nephritic patient very closely conforms, the daily excretion of urea by the three-day periods may be tabulated as follows:

Period 1, under ordinary diet and regimen	12 gm.
Period 2, under ordinary diet, etc., with evacuants	8 gm.
Period 3, under very restricted diet and rest	6 gm.
Period 4, under full carbohydrate diet plus 300 gm. lean meat	14 gm.
Period 5, under full carbohydrate diet plus 400 gm. lean meat	22 gm.
Period 6, under full carbohydrate diet plus 500 gm. lean meat	30 gm.
Period 7, under full carbohydrate diet plus 600 gm. lean meat	36 gm.

If during the fourth and subsequent periods the patient subjects himself to unusual active and passive muscular exercise, the urea output should be considerably augmented. Should there be any material deviation in a downward direction, from the curve of urea output, based on the above, a corresponding renal incapacity is indicated; any excess above that of the first period which may be observed during periods of four to seven, inclusive, represents reserve renal capacity.

In making these tests, wide variation in methods, and in additions to or subtraction from the details of those mentioned, may be practiced, as required, or as individual experience demonstrates to be the most available. Special emphasis, however, should be laid on the character of the proteid given, inasmuch as the urea output after the ingestion of meat follows fairly promptly and reaches its full height on the second, certainly on the third, of these days, whereas should eggs be employed, a much longer time is required for elimination. There may be added during these last three days as much active and physical muscular exercise as the patient is able to bear, which will further increase the output of urea. Personally, I prefer to make this a fourth three-day period, but this is probably immaterial.

As an example of the wide variations met with in making these estimations, the following case is worthy of mention. A few years ago a gentleman, 65 years of age, with chronic interstitial nephritis of many years' duration, passed, under great urinary stress, urine which contained during one twenty-four-hour period 64.5 gm. of urea. In making several tests, such as those described, the urea with great uniformity rose to from 30 to 35 gm. per day, and if much exercise should have been taken during the final period 35 to 40 gm. were not uncommon.

In making these tests from time to time, other important features were noted. For example, it was noticed almost constantly that, following the test, the patient appeared to be very much improved over his former condition. Most of this improvement was of such a nature that it could not be definitely measured. The patient, however, appeared to be fully aware of the fact, and indefinitely I shared his opinion. For this reason I have made these observations with more or less frequency in each patient for the purpose of obtaining, first, diagnostic and prognostic information; second, for possible therapeutic advantages; and third, that the patient's interest in his case and its management may be intelligently and optimistically maintained.

It is a fair inference that, if known, the output of urea can by simple measures and with safety be so stimulated that from an average of 10 to 15 gm. per day, an amount double this may be uniformly reached; the anatomic alterations and physiologic capacity are such as to eliminate urea, chlorids, phosphates, sulphates, etc., with fair safety. The danger to these chronic interstitial nephritics must, then, lie in the failure of the kidneys to eliminate other toxic substances of a nature so subtle as so far to defy analysis. It is also probable that the circulatory, and especially the extravascular circulatory changes are responsible for the failure to eliminate these heretofore undefined toxic agents. From this it may be readily seen that such measurements as those described fall far short of our requirements. Nevertheless, they are, taken in connection with such other observations as those of estimating the blood-pressure, the retinal fields and a careful review of the symptomatology, the best obtainable at the present time. As the results of my own observations, I am of the opinion that those cases in which there can be demonstrated, with regularity, a fair or large reserve renal capacity offer the best chances for prolonged life, physical and mental capacity and usefulness, while those in which the reserve renal capacity is but slight are in much greater risk of prematurely encountering the various serious accidents which accompany the later stages of this malady.

On the information obtained may be based some important details of management. In my own practice I advise such active and passive muscular exercises as may be taken without evidences of urea retention. Also the amount of proteid ingestion, always small or moderate, is gauged in like manner. These I consider points of great practical importance.

Along similar lines estimations may be made of the capacity of the kidneys to eliminate urinary water; also of chlorids. The latter, taken in connection with observations on the weight of the patient and of the extra-vascular serum accumulation, blood-pressure and cardiac hypertrophy, is of prime importance and should be made with regularity. It is not my purpose, however, in this paper to consider this line of thought; my main object is to stimulate further and more accurate investigation.

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ABSTRACT OF DISCUSSION

DR. FRANK BILLINGS, Chicago: What Dr. Wells has read to us this morning should be a lesson; what he has given us has been an individual study of a diseased organ, the kidney, and there is much that is new in it. The method he employs in estimating the functional capacity of the kidney is interesting; perhaps if one wished to offer a criticism one might say that one could not, by such measures as he employed, fully estimate the physiologic function of the kidney, or the metabolism of the body; yet clinically the measure he employs is the only one that is practical by which we can reach any such conclusions. The painstaking way he has worked with the different diets, day after day, and all before he has arrived at any conclusion, shows that his work and study is worthy of careful consideration. He is using the same methods we should use in other diseases, such as diabetes—measuring the individual capacity of the patient.

DR. WALTER L. BIERRING, Des Moines, Iowa: The thought arises whether the disturbances in the nutritive balance may not be influenced by other organs besides the liver. In considering the condition termed chronic nephritis, a very close relationship was recognized between that triad of structures, the myocardium, the blood-vessels and the kidneys. It is also exceedingly difficult to estimate the functional capacity of the kidney, to note only the urinary findings; and oftentimes many of the symptoms which are most indicative of chronic nephritis are those of retention phenomena. The prognosis in chronic nephritis is dependent largely on the condition of the myocardium, and it appears to me that possibly in our efforts to preserve this reserve force referred to in the paper, we really bring about a condition more favorable to the myocardium or myocardial function; whenever we bring about such a condition by means of proper diet or otherwise, it tends to lower arterial pressure, lessen the strain on the heart, the retention phenomena become less marked, and a better functional ability of the kidney is brought about.

DR. EDWARD F. WELLS, Chicago: My paper illustrates the futility of attempting to make a suitable presentation of an important subject in the short time allotted; therefore I limited my remarks mainly to a consideration of certain tests for measuring the reserve capacity in chronic interstitial nephritis, with a well-preserved circulatory balance. In a few words I mentioned the fact that under certain circumstances, especially with a failing circulatory balance and a consequent nutritional disturbance, the tests mentioned are inapplicable. It must be clearly apparent that the tests mentioned are crude, but, rudimentary as they are, the methods are those which I have found available and useful for testing the urinary

capacity of my patients. To these there should be added a study of the functional capacity of all the organs engaged in the preparation for urinary excretion. Those presented I should be pleased to have considered simply as a beginning of work along these lines, with the confident expectation that, intelligently practiced, they will be found as useful in the malady mentioned as are similar procedures in the study and management of diabetics. My object has been to extend our diagnostics—making a therapeutic and a prognostic diagnosis, if you will allo wthe terms; nevertheless, certain beneficial therapeutic results were obtained from the tests employed. However, I do not wish to lay any undue stress on this point.

TREATMENT OF DIABETES MELLITUS*

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It is impossible in a paper of this kind to consider more than the most important points in the treatment of diabetes mellitus. The various special treatments that have been recommended for this condition cannot be discussed. A bibliography will be appended, but no attempt will be made to give any extended references to the many excellent papers that have appeared on the subject. The object of this paper is to call attention to certain well-defined principles which must govern the treatment of this serious and stubborn disease, if any satisfactory outcome is to be hoped for.

While this paper deals only with the treatment of diabetes, it is necessary for purpose of clearness to refer briefly to the etiology of the disease. A small percentage of cases are caused by some severe pre-existing pathologic condition that removes them from consideration in a paper of this kind. Such cases are those due to carcinoma of the pancreas, to syphilis, etc.

The cases that will be considered in this paper and which make up approximately 90 per cent. of all those exhibited by the patients that present themselves, are due to what may be called errors of metabolism. To assign this as a cause, however, is not to explain, for there are causes operating behind these metabolic errors. A careful study of the habits of a large number of diabetics convinces me that one of the most fertile causes of diabetes mellitus is a long-continued toxemia or autointoxication due to gross errors in eating. There are, of course, other causes: oft-repeated emotional excitement, the excessive use of starches or of alcohol, arteriosclerosis, that undefinable something which, for want of a better name, we call the gouty diathesis; heredity, sometimes associated with exophthalmic goiter—all these seem to play a part in the etiology of this disease; but by far the most important cause is the one first given, errors in diet.

WHAT CONSTITUTES A CURE

It should be impressed on the patient that a "cure" of this disease is not possible in the sense in which he understands a "cure," viz., that after the glycosuria has been overcome he may go back to his old habits of diet. He should be told that after his apparent recovery, continued care in eating is essential to his continued health. As well might a consumptive in whom the tuberculous process has been arrested by careful treatment expect to go back to foul air, insufficient light and lack of nourishing food and remain well, as a diabetic to keep his urine sugar-free while violating the very dietetic rules the disregard of which brought on his trouble.

DIETETIC ERRORS A FREQUENT CAUSE

In the past twenty years I have treated somewhat over 1,100 diabetic patients. A careful study of these cases has impressed me with the fact that the great majority of patients who suffer with this disease do so because, through ignorance, they have grossly abused their systems with the quantity, quality and kind of food used. Too much food, bolting the food so as to preclude proper insalivation, reading, thinking deeply or worrying while eating, using uncooked or but partly cooked starches—all these are contributory causes to that deranged metabolism which exhibits itself as diabetes. Particular stress should be laid on the viciousness of the prevalent habit of using large quantities of carbohydrate foods in which the starches are practically in an uncooked state, baking-powder biscuits, batter cakes, corn-bread, waffles, various forms of crackers—especially the Graham cracker, so largely eaten under the mistaken idea that it has an extraordinary food value—all these forms of starchy food are bad and contribute in no small degree to recruit the increasing army of diabetes. These causes will be taken up in greater detail as the treatment of the disease is considered.

The value of any treatment for any disease must be judged by results. And the results must have been obtained not in a few isolated cases but in a long series of cases. In order to make clear whether the treatment about to be described is worthy of consideration a table is appended of the cases of all the patients treated from May 1 to Dec. 1, 1910, giving the age of the patient, the duration and severity of the disease and the result of the treatment.

This table, of course, is but the briefest of outlines and is intended only to emphasize the results of the treatment. While more or less complete histories of more than 1,100 cases could be given, such a tabulation would be out of place in a paper of this kind. Before closing, a typical case-history will be given in detail with the treatment.

OBJECTIVE POINTS IN TREATMENT

In treating the class of diabetics with which this paper deals there are four objects to be kept in view:

1. To free as nearly as possible the blood and other tissues from sugar; to do this it is necessary—

2. To find the individual patient's tolerance for carbohydrate and if possible to increase that tolerance;

3. To find a diet that will furnish the necessary calories without, at the same time, increasing the sugar intake; and

4. To prevent, by dietetic or other measures, the constipation with which the majority of these patients suffer and which increases the toxemic condition.

The first thing to impress on the patient is the fact that this disease—in the class of cases under consideration—is one that possibly has been years in developing and that it is useless and hopeless for him to expect to obtain any relief in a short time. The changes which a long-outraged system has undergone are such as cannot be remedied in a week or a month. In diabetes, more than in almost any other disease (unless it is tuberculosis), the help and cooperation of the patient is absolutely essential to successful treatment.

FUTILITY OF DRUGS

Another fact to be emphasized is the futility of drugs in the treatment of this disease; futile, because harmful habits cannot be cured by drugs. A large percentage of the patients who present themselves bring with them

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PATIENTS TREATED FROM MAY 1 TO DECEMBER 1, 1910

Sex.	Patient.	Age.	Duration of Disease in Months.	Complications.	Sp. Gr. Urine before Treat.	Duration Treatment in Weeks.	Sp. Gr. Urine after Treat.	Condition at End of Treatment.	Report 1/6/11
F.	H. A.	27	5		1.032	4	1.016	No sugar.	No report.
F.	W. H. A.	36	27		1.040	6	1.018	Trace sugar.	Died 4/11.
F.	J. A.	62	24		1.036	7	1.014	No sugar.	No sugar.
F.	G. A.	34	3		1.030	5	1.015	No sugar.	Trace sugar.
M.	F. A.	51	24	Diabetic cataract	1.045	7	1.016	No sugar.	No sugar.
F.	H. B.	38	7		1.042	5	1.016	No sugar.	No report.
M.	F. W. B.	40	6		1.038	4	1.013	No sugar.	No sugar.
F.	F. B.	32	2		1.035	2	1.017	Transitory case	
M.	A. S. B.	65	5	Arteriosclerosis	1.030	6	1.018	No sugar.	No report.
F.	L. B.	69	18	Arteriosclerosis	1.028	3	1.016	Trace sugar.	No sugar.
M.	R. M. B.	41	11		1.038	5	1.014	No sugar.	No sugar.
M.	S. J. B.	63	16	Arteriosclerosis	1.026	2	1.016	No sugar.	No sugar.
M.	D. B.	54	20	Pulmonary tuberculosis	1.040	7	1.018	Trace sugar.	Died 1/18/11.
M.	H. B.	57	0		1.036	8	1.015	No sugar.	Trace sugar.
F.	E. B.	68	60	Arteriosclerosis	1.030	4	1.012	No sugar.	3% sugar.
F.	L. B.	56	14		1.028	3	1.014	No sugar.	No report.
M.	L. B.	17	6		1.042	9	1.017	No sugar.	Died 3/11, septicemia.
F.	S. M. B.	56	24	Gangrene toe	1.040	4	1.016	No sugar.	No sugar.
M.	L. B.	14	5		1.045	12	1.015	No sugar.	No sugar.
M.	H. C.	41	4		1.036	3	1.014	No sugar.	No sugar.
M.	A. C.	54	17		1.028	5	1.015	No sugar.	No report.
M.	C. W. C.	49	22	Pulmonary tuberculosis	1.034	7	1.018	Trace sugar.	No report.
M.	S. C.	45	27		1.045	8	1.012	No sugar.	No sugar.
F.	M. C.	67	14	Arteriosclerosis	1.042	4	1.012	No sugar.	Trace sugar.
M.	R. L. C.	24	7		1.040	7	1.016	No sugar.	No report.
M.	M. C.	44	15		1.036	3	1.012	No sugar.	No sugar.
F.	H. C.	47	20		1.034	4	1.016	No sugar.	No sugar.
M.	A. C.	44	7		1.038	3	1.014	No sugar.	Trace sugar.
M.	W. H. D.	54	11		1.041	5	1.016	No sugar.	No sugar.
M.	F. D.	14	13		1.048	6	1.015	No sugar.	3% sugar.
M.	L. D.	36	5		1.037	6	1.016	No sugar.	Trace sugar.
F.	R. F.	19	4		1.048	7	1.014	No sugar.	No sugar.
F.	H. F.	47	14		1.036	5	1.016	No sugar.	No report.
F.	C. F.	50	9		1.034	4	1.018	No sugar.	No sugar.
M.	J. F.	47	11		1.028	3	1.016	No sugar.	No report.
M.	G. E. F.	30	4		1.032	2	1.017	Trace sugar.	No report.
M.	W. G.	59	13		1.038	3	1.014	No sugar.	No sugar.
M.	D. G.	40	5		1.041	6	1.015	No sugar.	No sugar.
F.	I. G.	44	11		1.038	5	1.017	No sugar.	No sugar.
F.	G. G.	47	14		1.040	4	1.016	No sugar.	No report.
F.	W. G.	48	8	Carbuncle neck	1.047	7	1.015	No sugar.	1% sugar.
F.	J. G.	44	7		1.036	4	1.018	Trace sugar.	No report.
M.	W. H.	54	14		1.028	6	1.016	No sugar.	No sugar.
F.	J. J.	58	48		1.040	4	1.016	No sugar.	No report.
M.	S. K.	30	5		1.047	6	1.015	No sugar.	1% sugar.
F.	G. K.	44	11		1.034	3	1.014	No sugar.	No sugar.
F.	C. L. K.	16	7		1.046	10	1.015	No sugar.	No sugar.
M.	G. M. K.	32	9		1.040	7	1.016	No sugar.	No report.
F.	L. L.	56	24		1.038	6	1.014	No sugar.	No sugar.
F.	K. M.	49	12		1.034	3	1.012	No sugar.	No sugar.
F.	C. M.	54	14		1.036	4	1.014	No sugar.	1% sugar.
F.	K. M.	56	7		1.034	2	1.016	Trace sugar.	1% sugar.
M.	L. M.	36	11		1.040	5	1.017	No sugar.	No sugar.
F.	S. M.	59	18	Arteriosclerosis	1.044	7	1.017	No sugar.	No report.
M.	J. Mc.	48	14		1.046	5	1.015	No sugar.	No sugar.
F.	G. M.	53	20		1.033	4	1.012	No sugar.	No sugar.
M.	L. M.	30	15		1.038	5	1.016	No sugar.	No sugar.
M.	J. McN.	49	15		1.047	4	1.014	No sugar.	1% sugar.
M.	Dr. McG.	66	12	Arteriosclerosis	1.044	6	1.012	No sugar.	No sugar.
M.	C. N.	45	8		1.046	10	1.014	No sugar.	No sugar.
M.	H. J. M.	48	11		1.040	3	1.014	No sugar.	Died coma. 3/11.
M.	D. N.	28	4		1.044	8	1.014	No sugar.	No sugar.
M.	F. R. N.	47	14		1.046	4	1.014	No sugar.	No sugar.
F.	H. P.	48	[illegible]		1.038	5	1.014	No sugar.	2% sugar.
F.	J. R.	49	11	Gangrene toe	1.042	7	1.016	No sugar.	No report.
M.	H. R.	66	7	Arteriosclerosis	1.036	5	1.012	No sugar.	Died. 1/11.
F.	A. R.	46	15		1.040	4	1.014	No sugar.	No sugar.
M.	T. R.	57	18		1.030	3	1.014	No sugar.	Trace sugar.
M.	N. S.	55	16	Dim sight	1.036	4	1.012	No sugar.	No sugar.
M.	F. S.	24	9		1.044	5	1.016	No sugar.	No sugar.
F.	L. B. S.	63	24	Arteriosclerosis	1.038	4	1.012	Trace sugar.	No report.
M.	T. L. S.	52	11	Arteriosclerosis	1.040	3	1.014	No sugar.	No sugar.
M.	L. S.	49	18	Albuminuria	1.042	7	1.015	No sugar.	No sugar.
M.	A. S.	56	15	Eye sight failing	1.030	2	1.016	Trace sugar.	1% sugar.
M.	L. S.	23	13	Pulmonary tuberculosis	1.047	2	1.020	Died while under treatment	
F.	R. S.	64	25	Arteriosclerosis	1.036	5	1.012	No sugar.	No sugar.
M.	H. U.	62	17	Arteriosclerosis	1.032	7	1.011	No sugar.	Died. 3/11.
M.	J. A. W.	40	9		1.042	5	1.014	No sugar.	No sugar.
F.	T. E. W.	52	11		1.038	3	1.012	No sugar.	No report.
F.	A. W.	47	7		1.040	5	1.014	No sugar.	No sugar.
F.	J. W.	38	5		1.042	3	1.014	No sugar.	No sugar.
M.	C. W.	59	13	Arteriosclerosis	1.034	6	1.012	No sugar.	No report.
M.	A. Z.	45	7		1.042	4	1.016	No sugar.	0.5% sugar.

SUMMARY

Number cases		83
Number patients died		7
Cause of death	Diabetic coma	3
	Septicemia	1
	Gangrene	1
	Pneumonia	2
Number glucose-free		40
Number temporarily glucose-free		16
No report received from		19
Number died under treatment		1

their bottles of codein and that worse than useless nostrum, Arsenauro. It is an unfortunate fact that many physicians still seem to harbor the belief that arsenic when prescribed under a proprietary name possesses virtues not to be found in the official preparations and, moreover, that it has lost the dangerous qualities inherent in it. I have seen so many patients with the codein habit and aggravated cases of constipation superimposed on the diabetes, and so many with wrecked digestive systems due to the long continued use of Arsenauro and other arsenic solutions, that I must utter a word of warning against the use of these drugs.

Too much stress cannot be laid on this point. Codein and arsenic may have their uses in a limited number of cases, but in the great majority of cases they should be left severely alone. If these drugs were merely worthless, there might not be any serious objections to their use, but they are a positive detriment and their continued use lessens the patient's chances of recovery. Not only that, but whenever a drug is given to a diabetic he is usually less careful in his method of living than if he realizes that his recovery depends on diet and hygiene alone.

QUANTITY OF FOOD IMPORTANT

One other essential must be made plain to the diabetic and that is the quantity of food eaten is just as important as the kind of food. Too often the patient suffering with diabetes is told to purchase gluten flour or gluten breads (most of which are frauds), and no limitation is put on the amount of these products that may be eaten. It is a fact that many mild cases of diabetes will show a diminution of sugar in the urine almost to the vanishing point when the patient is merely compelled to eat a very moderate ordinary diet. That is to say an antidiabetic diet is not always necessary to reduce the glycosuria; a reduction in the amount of ordinary food will sometimes accomplish the same end. So much for general directions.

WEIGHING FOOD NOT NECESSARY

It may be said in passing that the attempt to have the patient weigh his food does not give the satisfactory results that might be thought. It is more important to educate the diabetic to control his appetite by sheer force of will than it is to induce him to depend on the scale for his food allowance. Few patients will continue to use a scale after they have left the physician's care, while if they have been taught to exercise judgment and self-control in determining the amount of food they may take, a habit will have been formed that will be their salvation.

For drinking, copious draughts of some mildly alkaline water are desirable. The water should have sufficient salts in solution to increase slightly its natural diuretic effect. Distilled water should not be used, at least for any length of time.

The diet should, at first, be restricted as nearly as possible to proteids and fats, unless the patient shows signs of acidosis or impending coma, in which cases carbohydrates must be cautiously given. It is very essential that the food of the diabetic be well cooked, so as to tax to the smallest degree the weak digestive system. As the glucose diminishes, fresh vegetables may be added to the dietary, but of such quantity and kind as not to exceed 4 per cent. carbohydrate. Again it should be stated that the quantity of all food—even if it is carbohydrate-free—must be greatly restricted. The number of calories that the body ordinarily requires is no safe criterion of the amount of food that should be given a diabetic. It is not the quantity of food that should be metabolized, but the amount that can be metabolized, that should determine the amount given to the patient. All in excess of the quantity that the patient can actually use burdens the already overtaxed excretory organs and retards improvement.

OIL IN CONSTIPATION

Olive oil and castor oil, both for the food value and the laxative effect, should be given in all cases in which there is constipation—which means practically all cases. A palatable and efficient emulsion can be made by taking equal parts of olive oil, castor oil and glycerin and emulsifying it with 4 per cent. of Squibb's or Merck's gum arabic.

Castor oil	
Olive oil	
Glycerin āā	320.0
Gum arabic	36.0
Flavoring oil (gaultheria or cassia)	1.0

The patient must have at least one daily bowel movement and should avoid the ordinary purgatives such as aloes, cascara, calomel, etc.

The diabetic should be kept mentally indolent and physically active; at the end of each day he should be tired, but not to the point of fatigue. As much time as possible should be spent in the open air, and the sleeping-room should be as well ventilated as that of a patient suffering from incipient tuberculosis.

GLUTEN FOODS

The question of carbohydrate food is, of course, the paramount problem in the treatment of diabetes. The prescribing of so-called gluten flours has, in the past, been one of the most pernicious errors met by the physician who treats diabetics. In the first place, a very large proportion of the gluten flours on the American market are practically worthless as an antidiabetic food; in the second place, physicians in prescribing these gluten flours are likely to give their diabetic patients the impression that a gluten bread is a safe bread.

Many diabetics are killed yearly in the United States from the excessive ingestion of starches taken in the form of gluten breads. Ordinary wheat flour contains from 70 to 75 per cent. carbohydrates, and most of the widely advertised American brands of gluten flour contain all the way from 43 to 73 per cent. carbohydrate. These flours are not only absolutely worthless for the diabetic, but are exceedingly dangerous, because of the false sense of security which the term "gluten bread" carries with it. A flour containing 40 per cent. of starch may be useful in cases of transient glucosuria, but it has absolutely no place in the treatment of true diabetes. It is but fair to say that there are a few diabetic flours on the American market whose starch content brings them within the limit of safety—provided the quantity eaten is most carefully gauged.

Forced some years ago, by the inability to find a safe flour on the market, to devise a starch-poor bread or biscuit I have long given my patients a bread made after the following formula:

Unground poppy-seed	3 lbs.
Ground nuts (almonds, pecans, English walnuts or filberts; or a combination of these)	8 lbs.
Eggs	12
Flour of dried spinach	1 lb.
Salt	to flavor
Milk	enough to make a stiff batter

This batter, shaped into small biscuits or crackers, is baked and, if needed to be kept for any length of time after baking, is thoroughly dried at a mild heat until the moisture is reduced to 0.25 of 1 per cent. The dried biscuits are kept in hermetically sealed tin cans. Put up in this manner they may be kept indefinitely in perfect condition. These biscuits contain about 5 per cent. of carbohydrate.

The drying of these crackers is desirable because it necessitates the most thorough mastication, and thorough insalivation of food is one of the prime requisites of the successful treatment of diabetes. It is for the purpose of favoring mastication that the poppy-seeds are incorporated, although the oil they contain also increases the caloric value of the biscuit. But thorough chewing of the biscuits brings out the flavor of the poppy-seeds, and the pleasure of eating is much increased. The belief, common among laymen, that poppy-seeds contain opium, is, of course, erroneous. Of course these biscuits, like all other starch-poor products, are not so palatable as ordinary bread or biscuits. But they make a very safe and acceptable substitute for bread, and that is all that can be asked for.

SEVERE CASES

To go back to the patient: If, after two weeks of strict antidiabetic treatment the sugar does not disappear, the patient should be put to bed and placed on a diet consisting of one raw egg and 2 ounces of olive oil, three times or even four times a day, still continuing the free use of mildly alkaline drinking waters. Should the urine show the presence of diacetic acid, the oil must be reduced in quantity and small amounts of carbohydrates given—the patient, meantime, being kept in bed. Sometimes, in cases in which the system is threatened with an overwhelming acidosis, the temporary administration of small quantities of sodium bicarbonate may be tried, although I have seldom seen any good effect from it. This should be given as nearly as possible midway between meals, so as to cause the smallest degree of interference with digestion. As, however, it will cause some digestive disturbance no matter how carefully administered, its administration should not continue for any length of time.

After getting the patient to the point where the urine is sugar-free, small quantities of carbohydrates should be cautiously added to the dietary. Just as the presence of sugar in the blood establishes a vicious circle and causes the system to become still less able to "burn up" the sugar, so the absence of sugar gives the organism a greater tolerance for this necessary food. The carbohydrate should be added gradually, first at one meal only each day, and that meal preferably breakfast, as metabolism seems more active at that time. As systemic tolerance is increased, the starchy foods may be added to other meals until the point is reached where sugar appears in the urine; when this occurs, all starches should be withdrawn for a day or two and then gradually given again to a point just below that which has been shown to be dangerous.

It is better to add the starch in but one form, rather than several, as the system seems better able to adjust itself to one form of carbohydrate than to several, even though the sum total of starch be the same. What form that should be, can only be determined by experiment. Patients seem to differ in their ability to digest various forms of starch. One man may be more tolerant of bread-starch than of potato-starch; another may be unable to assimilate either bread- or potato-starch and may tolerate small quantities of oat-starch. These individual peculiarities must be ascertained and the results heeded. Another thing to be borne in mind is that all foods that are difficult for the patient to digest—whether they are starch-free or not—should be carefully avoided.

CONTROL OF THE PATIENT

Every physician who has treated many diabetic patients knows that, on the subject of eating, the diabetic is mentally unbalanced. This is true, not only regarding carbohydrate-containing foodstuffs, but regarding the quantity of all foods. Most diabetics suffer from an insatiable hunger. Successful treatment, therefore, depends wholly on the degree of control which the physician can exercise over his patient. In many cases the patients need to be watched with as much care as though they were morphin habitués undergoing antinarcotic treatment.

It is impossible to overemphasize the fact that the quantity of food is as important as the kind of food. It must be evident that a sick person cannot digest the same amount of food that a well person can, and it is the height of folly to permit the diabetic to eat voraciously, even of foods that are absolutely starch-free.

In the case of children it is practically always essential to put the patient in the charge of a competent disinterested person, such as a nurse. Experience has shown that relatives, especially parents, are utterly unable to withstand the tears and pleadings of the child for the deadly carbohydrates which its system craves and for which its whole being cries out. It is seemingly impossible to bring the layman to a full realization of the fact that the sugars and starches, which in health are harmless and necessary and which form so important a part of his daily dietary, are to the diabetic the most deadly and overwhelming poison. In spite of the usual doleful prognosis given in cases of juvenile diabetes, in cases in which the child can be absolutely controlled, the outlook is by no means so black as it is usually painted. This careful supervision must extend over years of time, as the child's system has to be "rebuilt."

Nor are children the only ones who need careful watching and oversight. One of the essentials to successful treatment is that the physician shall see the patient daily until the disease is well under control. A specimen of urine should be brought each day and an increase in the daily output of sugar calls for a careful inquiry into the dietetic and hygienic incidents of the day before. It should be insisted that the patient write down and bring a list of the kind and amount of food eaten each day. This not only permits of special directions being given regarding certain articles of diet, but it acts as a check on the patient. Many who would not hesitate to vary from the truth when giving a verbal account of the day's dietary will think twice before putting an untruth in writing. Printed diet lists containing general instructions should be given to every patient, while specific written directions should be given to every individual according to his needs.

Diabetes has already been compared to chronic morphinism or alcoholism, and so far as the principles of treatment are concerned the simile is a good one. The personality of the physician is of great importance. The patient must be impressed with the need of obeying instructions. We are creatures of habit and in the diabetic there is usually a vicious dietetic habit to overcome. Without the hearty cooperation of the patient the successful treatment of diabetes is impossible.

A TYPICAL CASE HISTORY

The following case history may be given as fairly typical of the patients that make up the majority of those treated:

Patient.—Swede, aged 40, married, father of five children, a carpenter by trade, consulted Dr. A. J. Ochsner because his hands and feet were cracked and bleeding. Dr. Ochsner after diagnosing the condition as one of diabetes, did not treat the patient but referred him to me for treatment.

History.—He had the disease, to his knowledge, for about 18 months when first seen. He had taken codein and arsenauro in large doses and over a long period; had been permitted to eat all the so-called gluten bread that he wished, and no restriction had been placed on the amount of starch-free foods that he had taken. He had been given a diet slip issued by a proprietary house and permission had been granted to eat any of the foods that the list did not prohibit. Before the diabetic condition developed he had eaten large quantities of partly cooked starches, had bolted his food and had partaken of a badly balanced diet; one containing large amounts of carbohydrate.

Condition When Examined.—The patient was passing from 4 to 5 liters of urine daily of a specific gravity of 1.046. There was no albumin and but occasional casts. The skin on the hands and feet was dried, cracked and bleeding.

Treatment.—Twelve glasses (8-ounce capacity) daily of mildly alkaline water was immediately prescribed. All so-called gluten foods were immediately withdrawn and the starch-poor (5 per cent.) biscuits previously described were substituted. The amount of all food—starch-free and otherwise—was greatly reduced. Castor oil in doses sufficient to overcome the constipation was given, but no other drugs were used. The glycosuria gradually diminished and finally after four weeks entirely disappeared.

Subsequent History.—No return of the glycosuria had occurred up to the time of his death from pneumonia eleven years later, during which period he returned for examination five times at intervals of about two years. During this entire time the patient tested his own urine with urinometer regularly according to instructions that are given during treatment to all adult patients.

SUMMARY

In brief, then, the following points are essential to the successful treatment of diabetes mellitus:

1. To impress on the patient that after his apparent recovery continued care in eating is essential to continued health.
2. To dispense, as a general thing, with such drugs as codein and arsenic and to make the patient rely practically entirely on the diet and hygiene.
3. To insist on the restriction of the quantity of food just as much as of the kind.
4. To overcome constipation by the use of castor oil and olive oil or by the use of a mixture of these two with glycerin.
5. To insist that the food must be thoroughly masticated.
6. To restrict carbohydrates at the outset to the smallest possible amount consistent with safety.
7. To add starches gradually in but one form rather than in several until the point of tolerance has been reached.
8. To eliminate from the dietary those articles of food that have been found to be difficult of digestion, even in health, though their starch-content may not be objectionable for a diabetic.
9. Above all, to impress the patient with the fact that his disease is essentially the result of vicious dietetic habits and that it is useless for him to expect any favorable results so long as the habit is persisted in.

ABSTRACT OF DISCUSSION

DR. ROBERT T. MORRIS, New York: I wish Dr. Hodgson had described post-mortem examination of the pancreas in his report on cases of diabetes. An interstitial pancreatitis, toxic in origin, squeezes out the islands of Langerhans in a proportion of cases of diabetes, and this fundamental cause for some cases of diabetes has been mostly overlooked. Go back of every case of diabetes. Speak of the fundamental causes. Refer to diabetes as a symptom only. You may have to go back to a fibroid appendix, a loose kidney, eye-strain, cholecystitis and the whole chain of factors in the production of toxic influence from the bowel. This toxic influence often induces an interstitial pancreatitis, the islands of Langerhans are squeezed out and diabetes results as a terminal symptom. Anything which irritates the floor of the fourth ventricle of the brain may have diabetes as a terminal symptom. It is not enough to speak of errors of digestion when discussing the subject of diabetes. Go back a step farther and tell us what is causing the errors of digestion. Surgeons have to deal with diabetes only when the hygroscopic sugar in the blood abstracts water from all body cells, and causes surgical conditions, or interferes with repair in surgical conditions of other origin; but we know that physicians as a rule are not going far enough back in their treatment of diabetics. We know they are not going back to the primary causes for the indigestion which leads to the toxemia which injures the pancreas and ends in the symptom known as diabetes. Examine the pancreas post mortem in more cases, and give us reports on unsuspected interstitial pancreatitis.

DR. EDWARD F. WELLS, Chicago: No foundation for the treatment of diabetes can be considered complete until there has been added to the nosologic diagnosis another and broader one, which may with propriety be termed a therapeutic diagnosis. My practice is as follows: The patient, whom we will assume to be somewhat beyond middle age, continues the diet to which he is accustomed for three days, during which time daily examinations are made of the twenty-four hours' urine. He is now placed on a diet from which carbohydrates are closely excluded, and this is continued until daily analyses show absence of urinary sugar, or until it declines to a point below which it will not descend. There is now added to the diet, carbohydrates, as for example, bread, in definite amounts, which are daily increased until sugar reappears, or increases, in the urine. A daily carbohydrate dietary contingent which falls well short of the patient's glycogenic capacity, as above determined, should be his limit in this class of foods. It is interesting to note that in these cases an increasing tolerance is developed by keeping the sugar out of the urine, or by keeping it down to the lowest possible level. Therefore, about twice a year the test is repeated, in order that, should such increased tolerance develop it may be discovered and measured, with a corresponding readjustment of the carbohydrate content of the dietary. Not only does this method permit intelligent management, but it necessitates taking the patient into partnership in the study and management of his case, thereby maintaining his interest through the many years during which the treatment must continue, which is until death ensues. These patients never recover; but if they receive such proper management as may be readily given them, they need not die from, although they will die with, diabetes.

DR. HENRY B. FAVILL, Chicago: I am very much impressed by what Dr. Hodgson says as to his accomplishments in cases of diabetes taken at random, but my own success has been various and not altogether satisfactory. I have no hesitation in subscribing to the detail which he sets forth, but I have not the least expectation of securing in general the percentage of satisfactory results which he can show.

Classification of glycosuria is difficult and at present not authoritative. It is to some extent a matter of words. What is the dividing line between "glycosuria" and "diabetes"? Is there a scientific distinction? Is it a matter of degree or is it a matter of personal equation and judgment? Is it not somewhat a matter of temperament on the part of the physician who classifies? Although I am in substantial accord with what Drs. Morris and Wells have stated, I still am at sea at this classification. In the course of the year I see many cases

showing sugar in the urine. I have not called them diabetes, however, unless the sugar has persisted. A case of glycosuria which clears up temporarily and remains clear for a reasonable length of time I do not call diabetes. However, what right have I to say that one is a case of diabetes and the other is not? This brings us really down to the practical question.

The broad handling of glycosuria, in my opinion, is based on a few facts. 1. There is a transitory glycosuria which is very transitory and unquestionably dietetic. 2. There is a glycosuria much more grave and largely amenable to dietetic regulation. 3. There is a glycosuria which is undoubtedly pathologic in its anatomy, which is only slightly amenable to regulation of the diet. This last is fundamentally progressive and the cases are more or less hopeless. I think we can say that we have all sorts of gradations in these questions and the question is not one particularly of a pathologic classification but a matter of judgment—that is to say, the interpretation of the practitioner.

The principles of dietetics have been thoroughly well stated, particularly with regard to limitations in amount and as to bringing the total food down to what the individual can safely handle. There is a matter which has not been mentioned which I think is of importance: the reciprocal balance between the capacities for assimilating carbohydrates and proteins. In a large percentage of patients, particularly those of a full habit, the capacity for handling carbohydrates can be pushed to a higher point by reducing the protein demand on the system. So far as my own observations have gone, individuals with glycosuria or with diabetes, who are well nourished, quite plethoric, respond quickly and favorably to the diminishing of their nitrogenous intake. The benefits from this process as a rule are greater than that from cutting down starches. I wish to emphasize also what Dr. Hodgson has said about cutting down the total food to the point of tolerance without any regard at first to theoretical caloric value.

DR. R. WERNICK, Los Angeles, Cal.: There is one thing I believe to be of importance, that has not been mentioned, pertaining to the administration of alkali by the stomach. In children, I prefer to administer the alkali by way of the bowel. The acid gastric juice stimulates both the liver and pancreas to action; and the administering of large doses of alkali by way of the stomach naturally interferes with the acidity of the stomach contents. I find that by administering alkali by the bowel I get far better results. Of course, in acute cases in which we do not want to stimulate the pancreas, we must administer alkalies by the stomach. Even after the abatement of the condition, it is advisable to give the alkalies by the bowel. Fifteen or twenty years ago, I had a horror when called on to treat a case of diabetes occurring in a child. I am glad to say, however, that in later years I have experienced a change of opinion, and I have been able to save several children. I have among my patients young girls and boys who were suffering five or ten years ago from diabetes. After acute diseases, frequently as a result of infection or inflammation, the islands of Langerhans are involved, and the functions of the pancreas interfered with, and as we often see the hydrochloric acid reappear in an acid stomach after prolonged absence, so also does the pancreas frequently resume its functions after prolonged treatment, unless, of course, the islands of Langerhans are totally destroyed.

DR. A. J. OCHSNER, Chicago: Naturally surgeons get many cases of diabetes; they come to us, or are sent, because of the accompanying gangrene. Twenty years ago we expected after an amputation of a limb because of diabetic gangrene, to have in a large proportion of cases, diabetic coma and death within forty-eight or seventy-two hours. Since that time my opinion has changed. Because of what I have learned from Dr. Hodgson I find that in my diabetic amputation cases the wounds heal by first intention. Dr. Hodgson has had these patients heal by first intention. After Dr. Hodgson has had these patients under observation for three or four weeks one cannot get them to eat anything he has forbidden. He impresses certain ideas on his patients and the patients stand by them. Some of Dr. Hodgson's patients under by observation have followed out his ideas and his directions for as long as sixteen years and have been free of sugar for this entire period of time. He goth these patients to believe that they should not eat four times as much as was necessary to be well; he got them to practice what he taught, and this, I believe, is the secret of his success in handling cases of diabetes.

I have operated on a large number of patients with pancreatitis and I have found a few suffering with diabetes; but this proportion was exceedingly small. Unfortunately, I am not in a position to make autopsies in cases of death of patients with diabetes. The same as most of you, I must go by what I find in the literature concerning the results of pancreatitis, and especially the effects of pancreatitis on the islands of Langerhans. That there is danger from pressure on the islands of Langerhans is undoubtedly true. If the patient does not die, how can we say that there is pressure on the islands of Langerhans as the result of diabetes? If we had a large number of cases coming to us for operation with pancreatitis, suffering also from diabetes, and if we could make autopsies in these cases, this point could be proved. But this is a point that is well worth bearing in mind and following out; in every case of diabetes resulting in death there should be a necropsy. Another thing of importance is to get people to understand that they are not well because of taking this, that or the other medicine; they get the idea that it is this or that medicine that cures them when, in fact, it is the dietetic treatment that results in good.

DR. A. J. HODGSON, Waukesha, Wis.: Details are necessary, of course, but to give the details of 100 patients suffering from diabetes, especially with regard to the qualitative and quantitative values of the food, would be almost impossible. Such details would fill many books. It should be remembered that every patient must be treated individually. No set rules will apply to all. With regard to the cases of pancreatitis, I am not certain as to the causes of this manifestation of diabetes. I have met with cases of pancreatitis, but I have never yet met with anyone who could inform me as to the causes. When these patients died and were brought to post mortem, the condition was found but it was not diagnosed during life. I think, however, that the long-continued influence of the toxemia, the toxemic poison, is a sufficient cause of the degeneration found, and thus a cause of the pancreatitis. I wish to emphasize the fact that no one can have sugar in the urine for any length of time without having some pathologic changes in the body. One of the symptoms which should be looked for is the loss, or partial loss, of sight; this is not due to cataract but possibly to an anemic condition of the retina caused by the presence of sugar in the blood. Many of these conditions have been mentioned in my paper. I have never seen any benefit result from the giving of strong alkalies that has not been secured by giving large draughts of a mildly alkaline water. I do not believe that the administration of sodium bicarbonate has any value in the curing of this trouble. Give plenty of mildly alkaline water; this is far better, in my opinion, than giving the strong alkalies.

Contribution to Knowledge.—The requirement that the investigator learn what other men have done before him in the field he seeks to enlarge, gives him an unusual realization of the part he may be playing in the promotion of natural knowledge. Knowledge grows like the picture in the dissected puzzle. Every addition must fit the parts already arranged in order to possess significance, and also every addition makes possible the fitting of new parts whose positions in the enlarging picture become thereby suddenly revealed. One of the delights of research, therefore, is the sense that every bit of new knowledge finds its place in the structure of truth, and that sooner or later it will be required for the further building of that structure. The relation which the fresh contribution bears to that already established, the discoverer clearly sees; what relation it will certainly bear to further contributions he may never know. How little did the men who studied the minute differences among mosquitoes, and who recorded the breeding habits of those insects, realize their important rôle in abolishing the pestilence of yellow fever, and in bringing about the immense social and political changes which will result from that conquest!—Cannon in *Science*.

THE DETECTION AND ESTIMATION OF GLUCOSE IN URINE*

STANLEY R. BENEDICT
NEW YORK

A REAGENT FOR QUALITATIVE USE

The property possessed by glucose, in common with many other sugars, of readily taking up oxygen in alkaline solution, is almost universally employed as a means of detecting this substance in urine.

The glucose molecule itself, however, is not the active reducing substance in alkaline solution, it having been previously shown[1] that the reducing action is due to a substance formed from the action of alkali on the sugar molecule. The reducing substance thus formed is not stable toward strong alkali, and unless permitted to exhibit its reducing action at once, is rapidly decomposed into compounds which have no reducing power, if sodium or potassium hydroxid be present. Solutions of the alkali carbonates, on the other hand, form the reducing substance from glucose a little more slowly than do the hydroxids, and have little, if any, destructive action on the reducing substance after it has been formed.

From a consideration of these facts it may be inferred that the presence of the strong alkali in Fehling's fluid may, under certain circumstances, interfere with the power of this solution to demonstrate small quantities of sugar. The urine, for instance, contains compounds (chief among which is probably creatinin, as pointed out by Maclean[2]), which seriously interfere with the detection of glucose by Fehling's solution. Thus, although Fehling's solution will detect 0.001 per cent. of glucose in pure solution, at least a hundred times this amount must be present in urine to give a positive reaction with this reagent. This marked loss in delicacy of Fehling's test when applied to urine is unquestionably due to the fact that the normal reduction of the solution is inhibited for a period long enough to allow the strong alkali present to decompose the reducing substance formed from the sugar molecule. For the most part these facts were pointed out in the communication above referred to,[1] and the advantages of employing a copper solution in which alkalinity is secured by carbonate instead of hydroxid, for the detection of sugar in urine, were also mentioned.

It was shown in this connection that a solution containing copper sulphate, Rochelle salt and sodium carbonate is more than ten times as delicate a test for glucose in urine as is Fehling's solution. Not only is such a reagent delicate for the detection of sugar in urine, but it is also more specific, in that it is not reduced by many non-carbohydrate substances which readily reduce copper in the presence of the stronger alkali. Chloroform, chloral, formaldehyd, aldehyd, uric acid and creatinin all reduce Fehling's solution, while they are without appreciable effect on the carbonate reagent.

This reagent, however, as originally proposed, and containing copper sulphate, Rochelle salt and sodium carbonate, has a disadvantage which is common to so many of the alkaline copper solutions, in that, after mixing, it rapidly deteriorates and becomes unfit for delicate work. It has been found, however, that if the Rochelle salt in such a solution be replaced by sodium or potassium citrate, a mixture is obtained which is very sensitive for sugar detection, especially in urine, and may be kept ready-mixed indefinitely without undergoing the slightest change. This solution has the following composition.

	gm. or c.c.
Copper sulphate (pure crystallized)	17.3
Sodium or potassium citrate	173.0
Sodium carbonate (crystallized)[3]	200.0
Distilled water to make	1,000.0

The citrate and carbonate are dissolved together (with the aid of heat) in about 700 c.c. of water. The mixture is then poured (through a filter if necessary) into a larger beaker or casserole. The copper sulphate (which should be dissolved separately in about 100 c.c. of water) is then poured slowly into the first solution, with constant stirring. The mixture is then cooled and diluted to one liter.

This reagent is about ten times as sensitive to sugar in urine as is Fehling's or Haines' solution, and unlike these latter solutions, is not appreciably reduced by creatinin, uric acid, chloroform or the simple aldehyds. The mixture may be kept indefinitely in uncolored glass or cork-stoppered bottles. Samples prepared over two years ago show no detectable change. Although the reagent is very sensitive for detecting sugar in urine, normal urines give no trace of a reaction when tested with it. An examination of hundreds of samples with the solution served to demonstrate that whenever a positive reaction is obtained, pathologic quantities of dextrose are present. Homogentisic acid (from the urine of alkatonurics) or greatly increased amounts of glycuronic acid, both of which substances readily reduce Fehling's solution, will also affect the carbonate-citrate reagent, and when the presence of these substances is suspected, the urine should be tested before and after fermentation with yeast. If the reducing action of the urine is apparent after twenty-four hours' fermentation, the reduction is not due to glucose, but may be due to lactose, or to either of the substances mentioned above. Interference from homogentisic acid is exceedingly rare, and occurs from glycuronic acid only after the ingestion of drugs which lead to increased elimination of this substance.

In regard to the use of the reagent recommended in this paper, it should be pointed out that until one is familiar with its behavior the following directions should be closely adhered to. The solution is unlike Fehling's reagent in many respects, and should not be used in the same way as this latter solution. No strongly dehydrating substance (such as caustic alkali) is present in the new reagent, hence its reduction product is apt to be yellow, or even greenish-yellow (consisting of the hydrated suboxid of copper) rather than the red suboxid. For the detection of glucose in urine about 5 c.c. of the reagent are placed in a test-tube and *8 to 10 drops (not more)*, of the urine to be examined are added. The mixture is then heated to vigorous boiling, kept at this temperature for one or two minutes, and allowed to cool spontaneously. In the presence of glucose *the entire body of the solution will be filled with a precipitate*, which may be red, yellow or greenish in tinge. If the quantity of glucose be low (under 0.3 per cent.) the precipitate forms only on cooling. If no sugar be present the solution either remains perfectly clear, or shows a faint turbidity that is blue in color, and consists of precipitated urates. The chief points to be remembered in the use of the reagent are (1) the addition of a small quantity of urine (8 to 10 drops)

* From the Laboratory of Biological Chemistry of Columbia University, at the College of Physicians and Surgeons, and under the auspices of the George Crocker Special Research Fund.

1. Benedict: Jour. Biol. Chem., 1907, iii, 101.
2. Maclean: Biochem. Jour., 1907, ii, 156.

3. One-half the weight of the anhydrous salt may be used.

to 5 c.c. of the reagent, this being desirable not because larger amounts of normal urine would cause reduction of the reagent, but because more delicate results are obtained by this procedure, (2) vigorous boiling of the solution after addition of the urine, and then allowing the mixture to cool spontaneously, and (3) if sugar be present, the solution (either before or after cooling) *will be filled from top to bottom with a precipitate,* so that the mixture becomes opaque. Since bulk, and not color, of the precipitate is made the basis of a positive reaction, the test may be carried out as readily in artificial light as in daylight, even when examining for very small quantities of sugar. The solution is not dark-colored like Fehling's fluid, so that the precipitate may readily be observed without waiting for it to settle.

A RAPID METHOD FOR THE QUANTITATIVE DETERMINATION OF SUGAR IN URINE

By modifying the composition of the solution described above, it has been found possible to apply the reagent to the rapid and accurate estimation of sugar in urine. Like the old titration process of Fehling, the method described below is based on the fact that in alkaline solution a given quantity of glucose reduces a definite amount of copper, thus decolorizing a certain amount of the copper solution. In the new method, however, instead of the reduced copper being precipitated as the red suboxid, which of its own color obscures the end-point of the reaction, the copper is precipitated as cuprous sulphocyanate, a snow-white compound, which is rather an aid than a hindrance to accurate observation of the disappearance of the last trace of blue color. The solution for quantitative work has the following composition:

	gm. or c.c.
Copper sulphate (pure crystallized)	18.0
Sodium carbonate (crystallized)[4]	200.0
Sodium or potassium citrate	200.0
Potassium sulphocyanate	125.0
Five per cent. potassium ferrocyanid solution	5.0
Distilled water to make a total volume of	1,000.0

With the aid of heat dissolve the carbonate, citrate and sulphocyanate in enough water to make about 800 c.c. of the mixture, and filter if necessary. Dissolve the copper sulphate separately in about 100 c.c. of water and pour the solution slowly into the other liquid, with constant stirring. Add the ferrocyanid solution, cool and dilute to exactly 1 liter. Of the various constituents, the copper salt only, need be weighed with exactness. Twenty-five c.c. of the reagent are reduced by 50 mg. of glucose.

Sugar estimations are conducted as follows: The urine, 10 c.c. of which should be diluted with water to 100 c.c. (unless the sugar content is believed to be low), is poured into a 50 c.c. burette up to the zero mark. Twenty-five c.c. of the reagent are measured with a pipette into a porcelain evaporation dish (25-30 cm. in diameter), 10 to 20 gm. of crystallized sodium carbonate (or one-half the weight of the anhydrous salt) are added, together with a small quantity of powdered pumice-stone or talcum, and the mixture heated to boiling over a free flame until the carbonate has entirely dissolved. The diluted urine is now run in from the burette, rather rapidly until a chalk-white precipitate forms, and the blue color of the mixture begins to lessen perceptibly, after which the solution from the burette must be run in a few drops at a time, until the disappearance of the last trace of blue color, which marks the end-point. The solution must be kept vigorously boiling throughout the entire titration. If the mixture becomes too concentrated during the process, water may be added from time to time to replace the volume lost by evaporation. The calculation of the percentage of sugar in the original sample of urine is very simple. The 25 c.c. of copper solution are reduced by exactly 50 mg. of glucose. Therefore the volume run out of the burette to effect the reduction contained 50 mg. of the sugar. When the urine is diluted 1:10, as in the usual titration of diabetic urines, the formula for calculating the per cent. of sugar is the following:

$$\frac{0.050}{X} \times 1{,}000 = \text{per cent. in original sample,}$$

wherein X is the number of cubic centimeters of the diluted urine required to reduce 25 c.c. of the copper solution.

In the use of this method chloroform must not be present during the titration. If used as a preservative in the urine it may be removed by boiling a sample for a few minutes, and then diluting to its original volume.

Like the reagent for qualitative employment, the one for quantitative work will keep indefinitely after its preparation. As regards the accuracy of the method, it may be stated that repeated determinations, and comparisons with results by the polariscope and by Allihn's gravimetric process have shown the method to be probably more exact than any other titration method available for sugar work.

437 West Fifty-Ninth Street.

4. One-half the weight of the anhydrous salt may be used.

DANGERS OF CERTAIN ETHICAL PROPRIETARY PREPARATIONS TO BOTH PHYSICIANS AND PUBLIC*

M. H. FUSSELL, M.D.
PHILADELPHIA

So much has been written on this subject that a new paper may seem superfluous. The reasons which have impelled this paper are the following:

1. My desk is continually flooded with medicaments sent by manufacturing pharmacists, and delivered by detail men who talk quasi-scientifically, and just as glibly as they did when I began to practice twenty-five years ago.

2. In mingling with other physicians I find many such mixtures and new preparations used in practice, the only excuse being the recommendations contained in literature accompanying the preparations.

3. Many such preparations are used by physicians without any knowledge of their contents or action. There can be no doubt that this use of the preparations is attended by dangers which I hope to make plain.

4. With few exceptions the preparations sent about as samples are mixtures. Now, every intelligent physician knows that if our use of drugs is to be of the least value, each prescription used must apply to the case in hand. It is literally impossible to make a cough mixture, a constipation pill, a remedy for nervousness, and so forth, that will be suitable for all cases. To teach that it is possible to do so, is most pernicious. We may as well—and indeed this often comes to pass under such circumstances—tell our patients they have pneumonia and send them to the druggist for a remedy for pneumonia. These dangers are particularly great to young men just entering the practice of medicine.

Numbers of conditions are necessary for intelligent therapeusis. Among them stand preeminently a careful diagnosis, accurate knowledge of the pathology of the condition under treatment, and an intelligent understanding of the action of the remedy to be used and what we expect to gain by its use. I realize that we

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

cannot always make a diagnosis, that we do not always know the pathology of the condition we are forced to treat, and that we frequently use drugs and other remedies symptomatically. Indeed, as we do not know the cause of all diseases, we are in such cases forced to relieve the symptoms and correct the effects of disease and leave the cure to Nature. This is a most necessary and important duty. To allow a patient to suffer, simply because we cannot strike at the cause of the disease, would be folly. But the physician who leaves no stone unturned will find fewer of these conditions present in his work and will gradually learn to search for and treat the cause of diseases where possible.

AN INTELLIGENT UNDERSTANDING OF THE ACTION OF THE REMEDY USED

Can this obtain where such mixtures as I quote below are used? As I write this, I have before me no less than thirty samples of simple drugs and mixtures of drugs which have been left on my desk within the past few weeks. Doubtless the same samples and probably many more have been left on the desk of every physician in my neighborhood. Let me analyze a very few of these preparations:

First I take up Neurosine. The label reads:

NEUROSINE contains: 5% Alcohol, .075 gr. per oz. each. Ext. Henbane and Fl. Ext. Belladonna, .060 gr. per oz. Oil Bitter Almonds. .60 gr. per oz. Fl. Ext. Cannabis Indica.

Serial No. 299—Guaranteed under the Food and Drugs Act, June 30, 1906

NEUROSINE.

The most powerful.	Anti-Spasmodic
Neurotic attainable.	Anodyne and Hypnotic.

FORMULA:—Each fluid drachm represents 5 grains each of C. P. Bromides of Potassium, Sodium and Ammonium; ⅛ grain Bromide of Zinc, .075 gr. per oz. pure Extracts Belladonna; .60 gr. per oz. Cannabis Indicas; .075 gr. per oz. Henbane; 7 gr. Extract Lupuli; 5 minims fluid Extract Cascara Sagrada with Aromatic Elixirs. Physicians may rely on this formula. (Beware of substitutes.)

DOSE:—Teaspoonful to a tablespoonful in water, three or more times a day, as in your judgment the case may warrant.

INDICATIONS:—Neurasthenia, Epilepsy, Chorea, Convulsions, Neuralgia, Headache, Delirium Tremens, Asthma, Migraine, Spermatorrhea, Whooping Cough, Alcoholism and all convulsive and reflex neuroses . . . Produces natural sleep. Neurosine contains no Opium, Morphine or Chloral. NO DETRIMENTAL AFTER EFFECTS. In female Neurosis combine Dioviburnia 2 parts, Neurosine 1 part.

DIOS CHEMICAL COMPANY, St. Louis, Mo., U. S. A.

The dangers present in this preparation are:

1. There is no absolute surety that the mixture does contain 5 grains of each of the bromids mentioned, or the other ingredients in the amounts given in the formula.

2. If the maximum dose advised is used, the patient would receive 60 grains of the bromids at a dose.

3. A dose of 0.037 gr. of henbane and belladonna extract might be dangerous if prescribed indiscriminately.

4. The physician is tempted to prescribe a mixture with a fixed and unalterable relative dose of various drugs, instead of prescribing as he should, that dose of each ingredient the special patient needs. Nothing leads more quickly to slipshod methods of practice than this use of compound mixtures for a disease named, rather than for a condition existing in a given patient.

5. The remedy is sold by pharmacists under its attractive and suggestive name, thus enabling the laity to dose themselves to the full with powerful if not distinctly dangerous remedies.

Furthermore, the label is misleading. It uses the name henbane instead of hyoscyamus. The physical action of belladonna and hyoscyamus is much the same. Also, the formula begins "Each fluid *drachm* contains . . ." and continues "0.075 gr. of ext. belladonna per *oz.*" This is confusing if not misleading.

LIQUOR SEDANS

Alcohol, 30 per cent.

Each fluid ounce represents:

Black Haw	60 gr.
Jamaica Dogwood	30 gr.

Hydrastine, representing 30 minims Fluid Extract Hydrastis. Aromatics.

UTERO-OVARIAN SEDATIVE AND ANODYNE

Used by leading medical practitioners in the treatment of diseases peculiar to women. The prescribed dose may be mixed with a little hot water before administration, to insure its prompt effect.

DOSE.—One-half to one teaspoonful (2 to 4 c.c.).

Guaranteed by Parke, Davis and Company under the Food and Drugs Act, June 30, 1906. Serial No. 6.

This is distinctly a bad label. In the first place, the common name of *Viburnum prunifolium* and *Pescidia* are used, it would seem, better to attract the attention of unthinking physicians and the laity. It is certainly a stretch of imagination and anything but proper to say that the preparation is used by leading medical practitioners. I would like to know their names.

Here the laity are tempted to use something used by "leading physicians." They are led to self-diagnosis and may miss many important conditions, notably carcinoma of the uterus, from which if there is any relief, the help must come early. Indeed, the physician who uses a preparation labeled "Utero-ovarian sedative and anodyne" will almost invariably depend on what the literature tells him rather than make a careful examination and discover if the patient has a serious disease.

DIOVIBURNIA

FORMULA

Every fl. oz. contains ¾ dr. each of the fl. Extracts:

Viburnum prunifolium,
Viburnum opulus,
Dioscorea villosa,
Aletris farinosa,
Helonias dioica,
Mitchella repens,
Caulophyllum thalictroides,
Scutellaria lateriflora.

Prepared exclusively for physicians' prescriptions.

Dioviburnia contains: 18 per cent. Alcohol.

Guaranteed under the Food and Drugs Act, June 30, 1906. No. 299.

NOTICE

The attention of the medical profession is called to this preparation on account of its unquestioned value as a uterine tonic and anti-spasmodic.

For indications read pamphlet around this bottle.

This is an especially pernicious form of preparation. In the first place, the value of the drugs is extremely problematic. In the second place, there are eight different drugs, and one fluid ounce of the preparation, according to the label, contains ¾ dr. each. The way the label is printed (3—4 dr. each) might easily lead to the thought that each ounce contained 3 drams or 4 drams of each extract.

Here the physician plays into the hands of unknown men and administers to patients drugs of unknown value in impossible doses. The patient is deceived and the doctor hoodwinked. Can the reader conceive of a more pitiable condition of both patient and physician, than where the physician is driven either through ignorance, indolence or cupidity to use such drugs in such a manner?

GERMILETUM.—Alcohol 18 per cent.; Formalin ¾ M. per oz. Amylacetate ⅓ M. per oz. Guaranteed under the Food and Drugs Act, June 30, 1906. Serial No. 299.

GERMILETUM

(Gim)

A perfect Antiseptic Germicide and Deodorant. Slightly Alkaline.

For internal and external use.

UNEXCELLED IN CATARRH AND ECZEMA

Par-Excellent in Obstetrical Practice.

FORMULA.—Borohydrofluoric Acid. Borosalybenzoic Acid. Boroglycerine. Formaldehyde with Menthol, Thymol Amyl Acetate and other Antiseptic Aromatics.

DIOS CHEMICAL CO., St. Louis, Mo.

The formula for Germiletum may safely be called a fake.[1] It is almost criminal to call a mixture like this "par-excellent in obstetrical practice." The dangers are great; there is no certainty, judging from the label, that it is the least value as an antiseptic. To depend on such material is to bring a blush of shame to the school from which we graduated. If there is any one condition which demands rigid antisepsis, it is our obstetrical work.

Let us analyze this "par-excellent" remedy. It contains 18 per cent. of alcohol. Alcohol is certainly valueless in this dilution. Formalin ¾ M. per ounce. I am uncertain what M. represents, possibly a meter. M. is an abbreviation sometimes used for minim. But judging from the odor entirely, there is about as much formalin in the preparations as there is in spring water.

Amylacetate is not mentioned so far as the writer knows in the eighth revision of the Pharmacopeia, and the National Standard Dispensatory (page 168), says: "It is a good solvent for resins, used as a component of fruit essences and as a solvent of resins in the preparation of lacquers and varnishes."

Neither borohydrofluoric acid nor borosalybenzoic acid is indexed in the "Dispensatory."

I repeat that to use such an article as this is to invite the dangers of inaccuracy and omissions.

SYRUP COCILLANA

COMPOUND

Each fluidounce contains:

Alcohol	5 per cent.
Heroin Hydrochlorid	8-24 grains
Tincture Euphorbiapilulifera	120 minims
Syrup wild lettuce	120 minims
Tincture Cocillana	40 minims
Syrup Squill Compound	24 minims
Cascarin (P. D. & Co.)	8 grains
Menthol	6.100 grains

DOSE.—One-half to one fluid-drachm (2 to 4 c.c.).

Guaranteed under the Food and Drugs Act, June 30, 1906.

I have called attention to this preparation before. Is it safe to spread broadcast a preparation that would give 1/24 gr. of heroin to each full dose? No wonder the drug is a good repeater. The laity buys it, the physician prescribes a lot of useless materials and get 1/24 gr. of heroin as the result.

Cocillana, from which the mixture gets its name, is the bark of *Guaria rusbyi*, a tree found in Bolivia. Its action is said to closely resemble that of ipecac. Can anyone suggest a more pernicious method of practicing medicine than using this mixture or any like it for coughs? One thing is certain, to my mind, the man who uses it rarely makes a diagnosis and the firm which sells it helps him in slipshod methods of practice.

1. Reports of Chem. Lab. Am. Med. Assn., iii, p. 11.

ANTIPHLOGISTINE

INDICATIONS

Antiphlogistine can be used in

Pneumonia	External Piles
Bronchitis	Moist Eczema
Pleurisy	Erysipelas
Osteitis	Frost Bites
Periostitis	Croup
Sprains	Inflammation of Bowels
Felons	Peritonitis
Sunburn	Tonsillitis
Metritis	Poisoned Wounds
Vaccination Sores	Inflamed Breasts
Chronic Ulcer	Bruises
Swollen glands	Abscesses
Boils	Endometritis
Buboes	Synovitis
Orchitis	Dysmenorrhœa

And whatever inflammation or congestion is a factor and local treatment is indicated.

Antiphlogistine is a notorious clay preparation. Notwithstanding the Pharmacopeia has added a preparation, cataplasma kaolini, which is said to resemble closely this preparation, it is little less than dangerous for the patient to use it in this line of ailments. Think of trifling with it in croup and peritonitis, to say nothing of pneumonia!

Croup should be held up to the laity as quite possible diphtheria. To persuade the parents of a child to apply clay to the throat is in the first place to do no good, and in the second place to invite danger, both to the individual suffering and to the family, for fear of diphtheria.

Pneumonia needs prompt treatment by rest and fresh air, not by clay.

Osteitis brings terrible results in its train. A physician knowing a patient to have osteitis and applying any clay preparation is recreant to his charge.

In regard to peritonitis, what has surgery taught us? That peritonitis has a cause; that this cause must be removed surgically, if our patient is not to risk his life.

ALKALOL

0.05 per cent. Alcohol

Is agreeable, non-toxic, non-irritant; combines correct alkalinity with a mild sedative and astringent action. Gives best results when used from one-half to full strength and frequently applied; particularly adapted to treating acute or chronic conditions in nose, throat, eye and ear. Cleansing and soothing when applied to any irritated or inflamed surface. A refreshing mouth and tooth wash in illness and health. In nasal or pharyngeal catarrh, hay fever, asthma, acute cold in the head, follicular tonsillitis, diphtheria or scarlet fever, it will keep nose and throat clean and add much to the patient's comfort. For burns, bruises, insect bites, ulcers, or any local inflammation, constant application by means of saturated gauze or cotton is desirable. Internally, Alkalol may be given in teaspoonful or tablespoonful doses.

Original Package, 8 oz., 50 cents; 16 oz., 75 cents.

ALKALOL CO., Taunton, Mass., U. S. A.

This is a famous alkaline wash; certainly no better, where it is useful at all, than normal salt solution and useless in asthma and diphtheria.

And so I might go on through my whole list of thirty samples. Indeed, I might go further as I have done in another article and beseech you to avoid using the compound remedies found in the Pharmacopeia. They all have the common fault of ready-made prescriptions. They are "one-sized suits for a mass of men" and further, many of them are mere copies of well-known patented formulas.

Why are such preparations used? Because we as physicians do not take pains for the best and because by our use of a drug firm's compound, we make it possible for them to sell. Do we not know that every time we prescribe a firm's special mixture, we make it possible for a patient to drug himself both to our loss and to his detriment? Since this article was written, indeed after I had started on my journey west, President Taft, in a most forceful message to Congress, has this to say about patented nostrums and the Food and Drugs Act:

> The Supreme Court has held in a recent decision (United States vs. O. A. Johnson, opinion May 29, 1911) that the Food and Drugs Act does not cover the knowingly false labeling of nostrums as to curative effect or physiological action and that inquiry under this salutary statute does not by its terms extend in any case to the inefficacy of medicines to work the cures claimed for them on the labels.
>
> It follows that, without fear of punishment under the law, unscrupulous persons, knowing the medicines to have no curative or remedial value for the diseases for which they indicate them, may ship, in interstate commerce, medicine composed of substances possessing any slight physiologic action and labeled as cures for diseases which, in the present state of science, are recognized as incurable.
>
> An evil which menaces the general health of the people strikes at the life of the nation. In my opinion, the sale of dangerously adulterated drugs or the sale of drugs under knowingly false claims as to their effect in disease, constitutes such an evil and warrants me in calling the matter to the attention of the Congress.
>
> Fraudulent misrepresentations of the curative value of nostrums not only operate to delude purchasers, but are a distinct menace to the public health. There are none so credulous as sufferers from disease. The need is urgent for legislation which will prevent the raising of false hopes of speedy cures of serious ailments by misstatements of fact as to worthless mixtures on which the sick will rely while their diseases progress unchecked.
>
> At the time the Food and Drugs Act was passed, there were current in commerce literally thousands of dangerous frauds labeled as cures for consumption and all lung diseases, cures for all kidney, liver and malarial troubles, cures for diabetes, cures for tumor and cancer, cures for all forms of heart disease in fact, cures for all the ills known at the present day.
>
> Unfortunately the statements were not true. The shameful fact is that those who deal in such preparations know they are deceiving credulous and ignorant unfortunates who suffer from some of the gravest ills to which the flesh of this day is subject. No physician of standing in his profession, no matter to what school of medicine he may belong, entertains the slightest idea that any of these preparations will work the wonders promised on the labels.

I might add to President Taft's sentence: "There are none so credulous as sufferers from disease," or physicians whose libraries are filled with circulars issued by drug firms. I believe that every physician in the United States, indeed every physician in the world, will agree with what President Taft has said so well. His words, I believe, must carry home to every one of my readers the points I wish to make. We, as physicians, have no right to prescribe for a patient anything but that which we know is for his greatest good. We can never fulfil this necessity by using such preparations as I have mentioned. It makes no difference whether the firm is unknown or whether it has a great name. I believe that we are perilously near being worthy of Taft's criticism of using preparations of which the statements are not true when we prescribe in such a manner, and I believe that firms who wheedle uneducated or young and inexperienced physicians into using such preparations are as guilty as the dispenser of a nostrum which he knows to be valueless.

ABSTRACT OF DISCUSSION

DR. THEODORE G. DAVIS, Los Angeles: I believe with Professor Schneider that the reason medical men of to-day use these proprietary preparations is that they know nothing about medicine, for they have not been taught medicine. They know nothing about the drugs they use. All they practically care for appears to be the dose. You cannot get the younger medical students of to-day to study pharmacology and therapeutics. I have taught students in materia medica therapeutics and clinical medicine and can speak from personal experience. The young men of to-day, especially in the state of California (I know it to be absolutely true) pay little or no attention to these subjects because they are not examined in therapeutics and materia medica. Four out of eleven students who were denied a passing mark in an examination that I gave were, without any consideration as to what their ratings were in my examination, passed in materia medica and therapeutics. The only way, I think, is to take the first year in pharmacy, as Professor Schneider has outlined, and let them know the drugs they are to use. They do not know one drug from another. Indeed, I became absolutely disheartened and disgusted in endeavoring to teach, and resigned from the position. It is true not only in California, but elsewhere. The young men of to-day do not study medicine and do not know how to treat the symptoms of disease. They have been taught anatomy, surgery, pathology, bacteriology and diagnosis, yet, as I have said to my classes, "What difference does it make to your patients whether you make a diagnosis or not if you cannot relieve them? If you do not know what to use, except some surgical procedure, what good does it do your patients?" A therapeutic diagnosis should be made with as great care as a pathologic diagnosis. I think that point of view is the point of view from which medical schools should take up the question.

DR. F. E. STEWART, Philadelphia: Dr. Fussell's paper deals with problems of great importance to the profession of pharmacy as well as to the profession of medicine. The term "ethical" as applied to monopolized materia medica products seems to me a misnomer. I can see nothing ethical in the so-called proprietary medicine business. The principle on which medicine and pharmacal practice is based is altruism. True pharmacy is a branch of medicine and its practitioners are under the same ethical obligations to the profession and to the public as physicians. There can be no two codes of ethics, one for the physician and another for the pharmacist and manufacturer of materia medica products. The dangers referred to by Dr. Fussell would all disappear if both professions would live up to their ethical obligations.

MR. LIGHTHEART, Sacramento: I have had various experiences with various physicians and I can answer in a way some of the questions that have been brought up. I see these things from a different point of view altogether. I am known as an ethical crank. I do no counter-prescribing because I think it is criminal. It is not allowed to go on in my business, but we have physicians who, for instance, advertise listerine. Who started that kind of a proposition? No one but the physicians. The same is true of other preparations. It is only a few years since we had a counter-trade on liquor antisepticus alkalinus. Who but the physician started the laity, by handing it out to his patient? Do not blame the pharmacist for all of these things; he is only too glad to put up prescriptions. I do not want to sell a "patent medicine." I try to persuade people to go to physicians. What do I get? I persuade John Smith to go to a physician; that physician sends that patient to his favorite druggist. I not only lose what little I would make on this particular transaction, but I lose all his patronage. This is a broad question. There is just as much wrong done on the side of physicians as on that of the pharmacists. It has been stated that the average physician does not know how to write a prescription. It was only the other day that I received a prescription containing strontium bromid and aromatic spirits of ammonia. A little while before I had one containing strychnin and strontium—therapeutically and chemically incompatible. I wish that physicians would come to us and say, "Here, can I write such a prescription?" They do it with me. They ring me up on the telephone. I do not

see that it belittles the physician to ask the pharmacist. If we come together as scientific and broad-minded men we will accomplish what we desire. Otherwise we will never get anywhere.

Dr. M. H. Fussell, Philadelphia: I do not know how we are going to get the men who are prescribing these things to cease unless we hold up to their eyes the foolishness of such things. I know that unquestionably the best thing to do is to get the boy before he gets out of college, and that is what we are trying to do. Some years ago in Boston I read an article, for which I was belabored for about a year, on dispensing versus prescribing. I took the ground that it was the duty of the man who lived in a city where he had competent pharmacists to prescribe and not to dispense. In my own particular neighborhood, which is one of the outlying wards of Philadelphia, twenty-four of the twenty-seven physicians living and practicing there do their own dispensing. Now that, I think, is not right. Possibly it was not of any use for me to read my paper, but I am going to continue to write and speak on these lines.

THERAPEUTICS OF ABNORMAL HEART RHYTHM

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A clear understanding of the manner in which disturbances of the cardiac rhythm are produced, and of the meaning of such disturbances, is so important to their intelligent management that I feel justified in presenting this subject, though I have nothing original or new to offer. While this subject has received the attention of many physiologists and clinicians, it is still a mystery to a large proportion of general practitioners, some of those we much respect not hesitating to admit that they "know nothing about it." This apathy cannot be too soon dispelled and it is therefore imperative that practitioners of medicine have this subject so frequently brought to their notice that they will be compelled to study it.

Whether we are ready to admit the correctness of the myogenic theory of cardiac action or not, it must be admitted that studies conducted with this theory as a basis have led to a much clearer understanding of cardiac function, and made possible an analysis of disturbances of cardiac rhythm, which in turn has made treatment of them less empiric than formerly was the case. Just as the recognition of a heart murmur is to some men, even to-day, an indication for treatment of that heart, no matter how well it may be acting, so, to very many more, is the appearance of a disturbance of rhythm a cause for anxiety and the issuing of a bad prognosis, followed by superfluous treatment, medicinal and other.

Incorporated in the adult heart is some tissue which is recognized as the remains of the primitive cardiac tube, and which is of great importance in the functioning of the heart. Modifications of this tissue lead to modifications of the normal functions. Normally, the most irritable part of this tissue is that situated at the mouth of the superior vena cava, called the sino-auricular node (Keith; Flack). Here the cardiac contraction is started and the contraction wave is then passed along to the rest of the heart. This node is therefore called the "pace-maker" of the heart's action. Some fibers of the primitive cardiac tissue are probably also scattered throughout the auricular wall, but, because not gathered in any bundles or masses, are harder to recognize. The normal cardiac rhythm, started at the sino-auricular node, is known as the fundamental or sinus rhythm. The rest of the primitive cardiac tissue arises in the auriculoventricular node (Tawara) situated in the wall of the right auricle, near the mouth of the coronary sinus, passes as the auriculoventricular bundle (Kent; His) to the auriculoventricular septum, where it divides into two limbs, one passing down the right ventricle and the other down the left ventricle. The function of this auriculoventricular tissue is to convey the contraction stimulus from auricle to ventricle.

The cardiac muscle is possessed of the following functions:

1. The power to produce a stimulus which will excite the heart to contract: *stimulus production.*
2. The power to receive a stimulus: *excitability.*
3. The power to convey a stimulus from one part of the heart to another: *conductivity.*
4. The power to contract on being stimulated: *contractility.*
5. The power to remain to a certain degree in contraction, even when the active stimulation has ceased: *tonicity.*

A disturbance of these functions leads to a disturbance of the normal heart action. There may be a disturbance of one of these functions without any interference with the others, or, there may be a disturbance of more than one function at the same time.

Heart muscle has a quality peculiar to itself, in that, given a heart which is possessed of excitability and contractility, any stimulus being applied, which is of sufficient strength to cause a contraction, the heart will contract with all its force. The strength of contraction will in no measure be dependent on the strength of the stimulus. Heart muscle either contracts with all the power it possesses or does not contract at all. This is known as the "all or nothing" law. Contracting with all its power, the heart muscle exhausts all its stored energy and as a consequence it becomes incapable of responding to further stimulation until it has had sufficient rest to allow a certain amount of energy to be reaccumulated. This period of non-excitability is known as the "refractory period." A stimulus applied to the heart during a refractory period, will not effect a contraction. It follows as a corollary that heart muscle cannot be tetanized. The bearing of these facts on our subject will later be apparent.

The disturbances of rhythm in relation to the several cardiac functions are shown in the accompanying table:

TABLE SHOWING DISTURBANCES OF RHYTHM IN RELATION TO THE SEVERAL CARDIAC FUNCTIONS

Normal cardiac function	Resulting abnormality, when corresponding function is disturbed	
1. Stimulus production.	Sinus irregularity.	Youthful irregularity.
2. Excitability.	Extrasystole.	Auricular. Ventricular. Auriculoventricular.
3. Conductivity.	Heart-block (partial or complete)	Sino-auricular. Interventricular (hemisystole). Auriculoventricular (functional). (organic).
4. Contractility.	Pulsus alternans.	
5. Tonicity.	Absolute irregularity. Pulsus irregularis perpetuus. (Auricular fibrillation, Nodal rhythm).	

The analysis of abnormal cardiac rhythm into the various types, as shown in the table is much facilitated by a study of the venous pulse. This pulse reflects the variations of pressure within the right auricle, and when studied in conjunction with the arterial pulse (and apex-

beat) which is the index of pressure in the left ventricle, we are enabled to compare the events occurring in auricle and ventricle at the same moment, and to determine by a comparison with what are known to be the normal relations, the existence or non-existence of disturbances in the case under investigation. For the study of the venous pulse, the internal or external jugular vein on the right side of the neck is usually chosen. The undulations in the veins are the result of the difference in pressure of blood within the veins and pressure of the atmosphere without the veins. When the pressure within is greater than the atmospheric pressure, the vein expands, and when the pressures are reversed, the vein collapses. The normal venous pulse depends on the suction-pump action of the heart. The normal relations of pressure in ventricle, artery and vein, as expressed in graphic curves, are shown in Figure 2.

While the curve obtained from the ventricle, and that from the artery (carotid, brachial or radial, according to special choice, or depending on the apparatus used for taking the tracings) are quite simple and easily understood; that obtained from the jugular is more complicated, and it may be well to here analyze the significance of the crests and vales. The essential crests are those marked *A* and *V*; the essential vales are those marked *X* and *Y*. While the crest marked *C* is of great importance in the analyses of combined tracings, it does not essentially belong to the jugular pulsation, because it is probably not dependent on increased auricular (and venous) pressure, but is transmitted from the carotid artery.

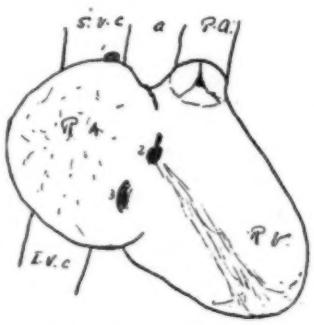

Fig. 1.—Diagram of right side of the heart. *S. V. C.*, Superior vena cava; *I. V. C.*, inferior vena cava; *A.*, aorta; *P. A.*, pulmonary artery; *R. A.*, right auricle; *R. V.*, right ventricle. 1. Sino-auricular node (Keith; Flack). 2. Auriculoventricular node (Tawara). 3. Mouth of coronary sinus. Arising from the auriculoventricular node is the auriculoventricular bundle (His Jr; Kent), which divides in two limbs, one for right and the other for left ventricle.

The crest *A* indicates a rise in auricular pressure due to the systole of the auricle. After this, the auricular pressure falls, to the point *X* (following the broken line) because of several factors; (1) the auricle relaxes after its systole; (2) the auriculoventricular valves are now closed, the ventricle is in systole, and, by virtue of its systolic contraction, it drags down the auriculoventricular septum, so enlarging the auricular cavity; (3) during ventricular systole, the heart becomes smaller in size and also blood is squeezed from the thoracic cavity into the greater circulatory tree, so increasing the negative pressure in the thorax; (4) also, at each systole, the movement of the heart in the chest pulls on the venæ cavæ, and so pumps blood from them into the auricle. While this last does not reduce auricular pressure, it does reduce pressure in the jugular vein. The crest *V*, which follows (ventricular wave; diastolic wave; telesystolic wave) indicates a rise in auricular pressure due to a storing of blood during auricular diastole and ventricular systole. This is followed by a sharp fall in pressure indicated at *Y*, this fall being due to the opening of the auriculoventricular valves which allows the blood stored in the auricle to flow freely into the ventricle. Crest *H* is of less importance, and is sometimes found during the diastolic period, in slowly acting hearts, and supposed to be due to a momentary floating up of the auriculoventricular cusps with the first rush of blood into the ventricle. This sends a wavelet back through auricle into vein. A third heart sound is described as accompanying this wave. Crest *C* is extremely important for clinical purposes. It marks the time of ventricular contraction, and so allows of measuring the time that elapses between auricular contraction, *A*, and ventricular contraction, *C*, i. e., the conduction time. It is of little clinical importance whether Mackenzie is correct in assuming this to be due to transmission of carotid pulsation, or whether it is due to a pushing up of the tricuspid valve when the intraventricular pressure rises during its systole. In either case,

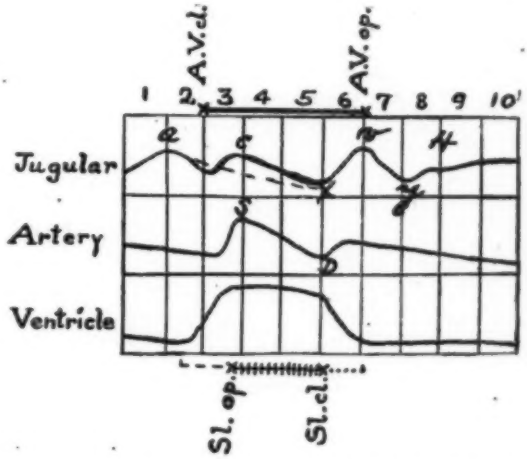

Fig. 2.—Normal relations of pressure in ventricle, artery and vein graphically represented. *A-V. cl.*, Auriculoventricular valves close; *A-V. op.*, Auriculoventricular valves open. In the interval they are closed; represented by a solid line. *Sl. op.*, Semilunar valves open; *Sl. cl.*, Semilunar valves closed. In the interval they are open; represented by a solid line with cross marks (sphygmic period); line of dashes, presphygmic period; line of dots, postsphygmic period. Time 1/10 second. (After Hirschfelder, modified.)

it marks the time of commencing ventricular systole and that is the important matter.

While the above assumes a study of the venous pulse from graphic tracings, and for accuracy these are indispensable, nevertheless the pulse is apparent to the eye, and can be seen in the veins of the neck, as a double wave. This normal venous pulse is called the double, or physiologic, or negative pulse. A venous pulse is obtainable in 80 per cent. of healthy individuals when they are lying down and the neck muscles are relaxed.

SINUS, OR YOUTHFUL IRREGULARITY (DISTURBANCE OF STIMULUS PRODUCTION).

When a normal individual takes some forced inspirations and the pulse is observed, it will be found that it becomes accelerated during inspiration, and slowed during the following expiration and pause. A pulse tracing taken from an artery will show that while the height of the pulse-waves is equal, indicating that the force of the pulse does not vary, the distance between

the systolic peaks varies, indicating a variation in length of diastole. Thus, the acceleration and slowing of the pulse are at the expense of diastole. A venous tracing taken at the same time is found to be also perfectly normal except in length of intervals between pulsations, thus corresponding perfectly to the arterial pulse. When such variations appear during quiet unforced breathing, they are abnormal and constitute the sinus irregularity. This irregularity is best marked when the heart beats slowly, for when it beats fast, the diastolic period is shortened and hence variations in its length become less apparent. The pathologic physiology of this disturbance is a reflex, acting through the vagus nerve, its inhibitions coming to the sino-auricular node at varying rate. There is here no disease of the heart itself; the cause of trouble lies outside of the heart. One-half hour after 1/60 gr. atropine sulphate is given hypodermatically, a sinus irregularity will usually disappear.

It occurs in young individuals, neurasthenics, and convalescents from acute infectious diseases, such as influenza, etc. It usually gives rise to no subjective *symptoms*. Sometimes the patient is conscious of the irregularity. At times, the period of lengthened diastole may be so drawn out as to cause transient cerebral anemia, with syncope. It is extremely important to recognize this type of irregularity for the *prognosis* is good, even when accompanied by occasional syncope.

Treatment is usually best omitted, so far as the irregularity itself is concerned. If the underlying cause is

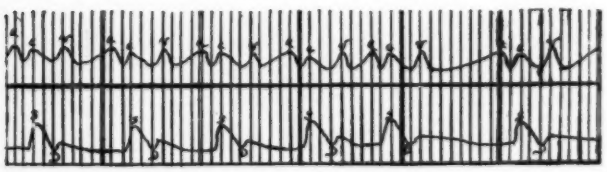

Fig. 3.—Sinus irregularity. Note height of systolic waves—*S*—is equal throughout, but distance between them varies. The venous pulse corresponds to the arterial.

of sufficient gravity, that should be treated. If the patient does not know of the existence of the irregularity, he should not be told, for the anxiety thus created will make it much worse, and the worry will do the patient more harm than will the sinus irregularity. The patient's family should be made acquainted with the state of affairs, for someone else may discover the irregularity and not recognizing the benign quality of it, start up trouble for the patient, family and previous physician. If any treatment is given at all, it should consist of reassurance, hygiene and nerve tonics. Probably the best drug is sodium glycerophosphate, gr. v, t. i. d. If there is anemia from the preexisting febrile disease, much fresh air, good eggs, and plenty of them, and iron in some form may be prescribed. Sexual irregularities and excesses must be tactfully inquired into and, if found, firmly suppressed.

EXTRASYSTOLE (DISTURBANCE OF EXCITABILITY)

While the cardiac contraction wave is normally initiated at the sino-auricular node, any other part of the remains of the primitive cardiac tissue which is found persisting in the adult heart, when rendered sufficiently irritable, may also start a contraction wave. Thus, while the sinus rhythm continues, there may be added to the contractions resulting from this, extrasystoles, due to a heightened irritability of the remaining primitive cardiac tissue. It is to be borne in mind that extrasystoles do not upset the fundamental sinus rhythm, but are interpolated, premature contractions, the impulse for them starting at some abnormal point in the heart. Depending on where these impulses start, we have (1) auricular extrasystoles, the impulse being started in the remains of primitive tissue in the auricle; (2) ventricular extrasystoles when the impulse starts in this tissue found persisting in the auriculoventricular bundle beyond the auriculoventricular node, or its ramifications in the ventricle, and (3) auriculoventricular (or nodal) extrasystoles, when the impulse is started in the auriculoventricular node. The several forms may be differentiated by means of polygraphic tracings (Figs. 4 and 5). (Auriculoventricular extrasystole is characterized by a shortened *a-c* interval. Beyond this I shall not discuss it.)

With the beginning of diastole, the heart muscle rests and the energy for its various functions, which during systole is exhausted, is gradually restored. Thus the refractory period of the heart terminates with the termination of systole, and the longer the heart has been in diastole, the more thoroughly are its functions recuperated and the more sensitive is it to stimuli that reach it. When conditions for starting extrasystolic stimuli are present, such a stimulus acting on the heart during diastole, even though premature, will elicit a response and contraction. It is clear that the earlier in diastole this stimulus acts, the feebler the resulting contraction and *vice versa*. Since extrasystoles are always premature, no extrasystolic contraction is as strong as a contraction which results from a stimulus started at the normal time in the cardiac cycle, when the heart's diastole is complete and its functional energy completely restored. Extrasystolic contractions sometimes are so premature and so weak as to be too feeble to cause the propagation of a pulse-wave to the wrist, so that it may seem, even on a sphygmographic tracing, that a heart's beat is entirely omitted, because the nevt normal sinus stimulus finds the heart in contraction as a result of the extrasystolic stimulus, hence refractory, and hence does not succeed in causing the contraction at the normal time. This is the *compensatory pause* which follows an extrasystolic contraction, and the time occupied by normal systole + extrasystole + compensatory pause, is equivalent to the time occupied by two complete normal cardiac cycles. The long pause gives the heart a longer rest than it gets during a normal diastole, as a consequence of which it responds to the next stimulus coming from the sinus with more than normal vigor, causing an abnormally large systolic wave in the pulse. A very early and feeble extrasystole which causes no wave in the arterial pulse may be recognized in a tracing from the cardiac apex, and usually also by the heart sounds. If the normal cardiac sounds may be represented as 1-2—1-2—1-2, etc., in case of extrasystole they are 1-2-3-4——1-2—1-2, etc., or, when a very feeble extrasystole, 1-2-3———1-2—1-2, etc. Also 3-4 are feebler than 1-2.

Extrasystoles may appear at regular or irregular intervals, and with varying frequency. They cause one form of pulsus bigeminus, when appearing after every other normal systole.

Extrasystoles point to a heightened irritability of the heart (disturbance of excitability) and this usually depends on disease of the cardiac tissue. There may be disease of the myocardium, or, more commonly, of the

remains of the primitive cardiac tissue. It is found in hearts the seat of rheumatic trouble and in cardiosclerosis cases, with disease of the coronaries. It is met with in young adults, middle-aged and elderly. While some disease of the cardiac tissue is an underlying condition, functional disturbances that raise the irritability of the entire nervous system often precipitate the appearance of extrasystoles and the removal of such disturbances terminates the attack. This is especially true when it appears in rapidly acting hearts. More commonly, extrasystoles appear in slow-acting sclerotic hearts. Dyspepsia, flatulence, and indicanuria are exciting causes, as also, and quite markedly, the abuse of tobacco.

Symptoms often are absent and this, as a sinus irregularity, may be discovered by accident in the course of a routine examination. When subjective symptoms are noted, it is usually in the younger and neurotic individuals. They complain of "palpitation," and this means, either that they feel the irregular heart action, or that they notice the long pause and apparent stopping of the heart, or, what is more annoying, they feel the "thump" following the long pause and dependent on the abnormally vigorous systole occurring at such time. Rarely, the pause is so long as to cause transient cerebral anemia and syncope.

Prognosis depends on the underlying cause of the trouble. The appearance of the extrasystole in itself adds no great gravity to the condition. The recognition of an extrasystole may, however, be the first thing to attract attention to the heart at all, and a person with extrasystoles is not so good a physical risk as a normal person. Some maintain that it always points to disease of the myocardium. Also, a nervous woman may be made more nervous by the symptoms the extrasystoles cause her, and especially, by the fear of serious heart trouble which they will arouse in her. This increased nervous irritability will, in turn, aggravate the irregularity.

Treatment, again, depends on the underlying cause, and that should be treated. The condition must not be made too much of and the patient must be quieted, not excited and frightened. Worry and sleeplessness must be combated, and a run-down nervous system toned up by hygienic and hydrotherapeutic methods. Dyspepsia must be corrected, and especially should constipation and indicanuria be relieved. For the latter, as a symptomatic remedy, betanaphthol in 3 to 4 gr. doses given in capsules, three times a day, after meals, is very useful. Tobacco should be at first entirely stopped, and when symptoms have disappeared, allowed in very limited quantity. This alone frequently causes a disappearance of gastric hypersecretion and hyperacidity, which are also aggravating factors of the irregularity. As for direct drug treatment, the most important thing to remember is that digitalis, certainly in doses large enough to be of any value in a heart disturbance when it *is* indicated, should in this condition be cautiously avoided. When a heart is irregular and the circulation is so disturbed as to indicate the desirability of digitalis, the irregularity will be found to be of a different type than uncomplicated extrasystole. To small "tonic" doses, such as ¼ gr. of the powdered leaves, three or four times a day, there is no objection, and the same holds good for doses of gr. 1/200 to gr. 1/120 of strychnin sulphate, but the latter also is not to be used in larger doses. Large doses of digitalis may superadd functional heart-block to the extrasystole, for the two are not infrequently combined. Bromids and potassium iodid, the former in 20 gr. doses, t. i. d., and the latter in 5 to 10 gr. doses, t. i. d., are the most commonly useful drugs.

HEART-BLOCK (DISTURBANCE OF CONDUCTIVITY)

The normal impulse for cardiac action beginning at the sino-auricular node, may, in the progress to the rest of the heart, be partly or completely interrupted, thus resulting in partial or complete heart-block. Depending on the point where the interruption occurs, the block is classified as sino-auricular, interventricular and auriculoventricular. The commonest and by far the most important of these, at least for clinical purposes, is the last, and I shall therefore dismiss the other two forms without discussion, except to mention that it is still questionable whether interventricular block (or hemisystole) occurs at all.

Auriculoventricular heart-block may be functional or organic. Functional block is dependent on overstimulation of the vagus nerve, and while a tumor pressing on the nerve and some other still less frequent factors may produce it, the clinical factor of great importance is digitalis poisoning. Organic block is due to disease of the auriculoventricular bundle, depending on old rheumatic infiltration, sclerosis and consequent narrowing of the bundle, or, more commonly, sclerosis secondary to loss of nutrition dependent on fibrosis or sclerosis of the coronary arteries. Rarely, tertiary syphilis (gumma) may be the cause. Auriculoventricular heart-block is therefore found in middle-aged and elderly individuals, those suffering from general arteriofibrosis particularly, and in younger individuals with mitral stenosis.

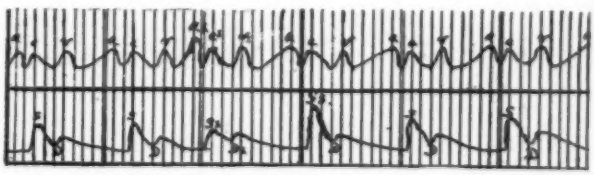

Fig. 4.—Auricular extrasystole. Note the premature auricular contraction at *Ax*, followed by a premaure ventricular systole at *Sx*, which reflects the waves *Cx* and *Vx* in the venous pulse. Note the long pause, with following large systolic wave at *Ss*. Note persistence of sinus rhythm.

On referring back to the diagram of a normal venous pulse-tracing (Fig. 2) in which the pulse is taken as beating at a normal rate (here for the purposes of greater clearness made 60 per minute) it is found that the *a-c* interval is 2/10 second. This *a-c* period is occupied by three events; (1) the auricular systole, (2) conduction of impulse from auricle to ventricle, and (3) the presphygmic period. Event 2 occupies most of this time, and is the only one that is to any degree variable. Therefore any variation in the length of the *a-c* interval, may be ascribed to variations in the rate of conduction, and factors 1 and 3 entirely ignored. A lengthening of the *a-c* interval beyond the normal is the mildest degree of block, and may for a long time be the only objective evidence of trouble. When more advanced, ventricular systoles are at intervals entirely dropped, due to the occasional failure of the impulse to pass over the bundle to the ventricle. Such dropping may occur with varying frequency at irregular or regular intervals and is preceded by a progressive lengthening of the *a-c* interval. Partial block may be so far advanced as to show a single ventricular systole to 2, 3, 4, and even more auricular systoles. When the block is

complete, the auricular impulse is not conveyed to the ventricle at all, and the latter chamber assumes an independent rhythm, which is usually 30 per minute, or less. In such case, the radial pulse, while slow, has a regular rhythm, and combined tracings show no regular relation between auricular and ventricular systoles (between *a* and *c* waves of the venous pulse).

In diagnosing heart-block, the type of irregularity most likely to be confusing is extrasystole. While in the latter during the period when a pulse-beat is apparently dropped, the short extrasystolic sounds can be heard, in heart-block, no sound is audible. When polygraphic tracings are taken, the difference is quite readily made out (Figs. 4, 5 and 6).

The subjective *symptoms* vary in intensity with the degree of trouble. The especially characteristic ones, in advanced cases, are those of the Adams-Stokes syndrome; i. e., vertigo, syncope, and epileptiform attacks, with a very slow and intermittent (or regular) arterial pulse. The slow pulse is what most readily raises the suspicion that this condition may exist. In the milder cases the patients suffer symptoms dependent on the insufficient peripheral circulation, for the total cardiac output is necessarily reduced by excessive slowing of the pulse, with its resultant prolongation of diastole into a stage of diastasis.

Prognosis is not good, even in moderate cases, because, when organic the condition, except in the rare cases of tertiary syphilis, is not removable.

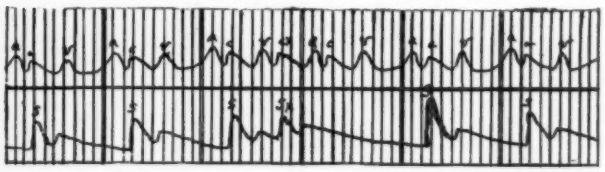

Fig. 5.—Ventricular extrasystole. Note premature systolic wave *Sx*, with reflected *Cx* in venous pulse. Note absence of a premature *a* wave in the venous pulse. Note persistence of sinus rhythm.

Treatment consists in advising the patient to live a life that will require activity only commensurate with a reduced cardiac output. If subject to syncopal attacks, he must be cautioned against being about alone, particularly in places where a sudden attack may leave him dangerously exposed. When syphilis is suspected, of course most vigorous antisyphilitic treatment must be promptly instituted, and here potassium iodid is most important. Digitalis must be carefully avoided. In the average organic case, the constant use of small doses of potassium iodid is indicated. In functional cases, if digitalis is the cause, of course this must be stopped, and atropin in large doses, gr. 1/100 to gr. 1/60 t. i. d. administered.

PULSUS ALTERNANS (DISTURBANCE OF CONTRACTILITY)

The pulse irregularity here to be considered is not an irregularity of rhythm, as the preceding three classes were, but an irregularity of force, with a maintenance, when uncomplicated, of a normal rhythm. It may, however, appear in combination with other irregularities, especially, extrasystole. The characteristics are shown in Figure 7.

It is there seen that the time interval separating all the systoles is the same, but the height of the systolic waves varies, every high wave being followed and preceded by a low one. All the high waves are of about equal height, and all the low waves are also of about equal height. The venous pulse shows no irregularity.

When, for any reason, the reserve stock of the contractile power of the ventricle becomes exhausted, the ventricle contracts in this alternating manner. Thus, during a strong and prolonged systole (high wave) the period of rest is encroached on, the contractile power is not fully restored and the succeeding beat is a feebler one (low wave). This results in a shorter systole, a longer period of rest becomes possible, and the ventricle so far regains its contractile power as again to be capable of producing a strong beat—and so on.

Factors that unduly increase the work of the heart tend to exhaust its contractile power. Thus we find as causes of this disturbance, old cardiac rheumatism with valvular defects, which thus mechanically embarrass its action; especially mitral stenosis, for in this the nutrition of the ventricular muscle also suffers. Cardiosclerosis, arteriosclerosis, sclerosis of the coronary arteries, chronic nephritis, and cardiac overaction (with marked increase of rate), from any cause. Under the last head, cases of paroxysmal tachycardia are especially to be noted.

This condition is found in middle-aged and elderly individuals, and most commonly with high blood-pressures.

The *subjective symptoms*, though dependent on an exhaustion of contractility, appear while the blood-pressure is still high, and usually while the classical signs of cardiac failure, with the exception of dyspnea, are not manifest. Thus, the blood-pressure is high, the pulse rhythm is regular, there is no cyanosis, no dropsy, and no cardiac dilatation (hypertrophy is usually present). The most distressing symptom is a sense of choking or smothering. There may be substernal oppression or even pain, with radiation to the neck and left arm, and marked palpitation. Sometimes all the syndrome of angina pectoris is manifest. There is a desire for absolute rest, for any movement, by increasing the demand on cardiac contractility, aggravates the distress. The distinctive objective sign of the condition is the alternating pulse.

The *prognosis*, while varying with the underlying cause, is always grave, for in most instances the fundamental pathologic change is permanent, and the function disturbed is the most important of the cardiac functions for the maintenance of the circulatory output. In cases of paroxysmal tachycardia, in which the exciting factor of the attacks of tachycardia is often a neurosis which is amenable to sedative treatment directed toward the nervous system (not forgetting psychotherapy), by removing the exciting cause and this stopping the attacks of tachycardia which are exhausting the contractility, the gravity of the prognosis may be modified.

Treatment consists of rest, mental and physical. All sources of worry must be removed; sleep encouraged, even if hypnotic drugs are required; muscular exertion reduced to a minimum; gastro-intestinal tract kept normal, to avoid flatulence and indicanuria. Excessive blood-pressure must be reduced to the point at which the patient feels most comfortable. No arbitrary rule as to how far to reduce blood-pressure can be given. The most satisfactory dilators are the nitrites in the beginning, to be succeeded by chloral hydrate, gr. v. every 4 hours. In mild cases or for prolonged use potassium iodid, gr. x, t. i. d., is useful. Here again, digitalis must be avoided.

ABSOLUTE IRREGULARITY; PULSUS IRREGULARIS PERPETUUS; AURICULAR FIBRILLATION; NODAL RHYTHM (DISTURBANCE OF TONICITY)

While in the irregularities until now considered the normal rhythm is disturbed, there may be some rhythm to the cardiac action, even though an abnormal one. In the type of irregularity now to be considered, all rhythm is lost. The cardiac action is absolutely disorderly, hence the name "absolute irregularity." With this type of irregularity generally goes a loss of tonicity, and the symptoms resulting from it.

The appearance of this irregularity is now recognized to be dependent on auricular fibrillation. When the wall of the auricle becomes so diseased as to cause this chamber to fibrillate (i. e., the individual fibers undergo independent contraction), the conducting system of the heart is bombarded by impulses begging for passage at the rate of 400 to 900 per minute. This system cannot convey the impulses so rapidly, so that most of them are blocked from passage to the ventricle. The impulses that do pass, however, are usually many more than normal, and they are passed through the conducting system at an irregular rate and in uneven degree. As a consequence, the arterial pulse that results is much more rapid than normal, irregular in both rhythm (or rather without rhythm) and force, the strength of a ventricular contraction not being commensurate with the length of the preceding pause. In venous tracings the *a* wave disappears because the auricle does not undergo any systole, and the resulting venous pulse is of the *ventricular* or positive type, or the *m*-shaped wave. In electrocardiograms, the *p* wave, which represents auricular systole, disappears and the curve bears evidence of fine undulations appearing at the rate of 400 to 900 a minute. In cases of mitral stenosis, a previously evident presystolic murmur disappears with the inception of this arrhythmia.

This type of disturbance may be transient and of short duration, as in some cases of paroxysmal tachycardia, but is most commonly found in chronic cases of rheumatic disease of the valves or myocardium, or old cardiosclerosis cases. Having once appeared, even though for a short time, it will usually reappear, and finally remain permanent. Of patients with valvular disease, mitral stenosis cases are the commonest subjects of this arrhythmia. The degree of irregularity and rapidity of the pulse are usually in direct proportion to each other.

The *symptoms* resulting are those of cardiac failure with loss of tonicity, as dyspnea, orthopnea, dropsy, enlarged liver and congested kidneys and lungs, and often hydrothorax. The heart is found dilated, sounds feeble, irregular and rapid.

The *prognosis* is bad, in so far as there is serious underlying disease, which it is not possible to remove, but we have in these cases a sovereign remedy in digitalis. With the proper use of this drug, which includes a good preparation, freshly made from good leaves, and given in sufficiently large doses, it is specific, so far as the decompensation is concerned. Once cardiac failure from auricular fibrillation is diagnosed, no matter what the size of the heart, no matter what valve lesion is present or not present, digitalis is indicated. If the stomach will tolerate a large potion, the best preparation is a freshly made infusion, given in doses of half an ounce to one ounce two or three times daily, and continued until the desired effect is produced, or until nausea and vomiting are caused. Then the dose must be reduced. If the large potions are too much for the stomach, it will often stand better a good fluidextract given in proportional doses (1 dram of the infusion equals 1 minim of the fluidextract). This constitutes a small dose to take, and may even be given in pill form, in which form it is very well tolerated. So far as drugs are concerned, no other need be considered in this condition, except perhaps to mention magnesium sulphate to produce free catharsis when there is dropsy, and sodium chlorid to be omitted or reduced to a minimum.

Of course, when massive doses of digitalis are indicated, rest is urgently indicated, and this includes reduction of the fluid intake to the minimum amount which is compatible with comfort.

In this condition, the benefit which digitalis exercises is chiefly to be attributed to its stimulating effect on the vagus, thus slowing the ventricular contractions by blocking out some of the numerous impulses which the fibrillating auricle is sending down to the conducting system. The ventricle can thus rest, fill better, and contract more vigorously and to more purpose. The direct stimulation of the ventricular muscle, while perhaps not so marked as the vagus stimulation and not so easily demonstrable, nevertheless does obtain. Digitalis has its most remarkable effect in cases in which the pulse is very rapid before it is used.

Fig. 6.—Auriculoventricular block. Note absence of response in arterial pulse to auricular contraction, *a* in period 3. Note lengthening of the *a-c* interval, comparing periods 1 and 2, previous to the block, and the shortened *a-c* interval in period 4, which follows the block.

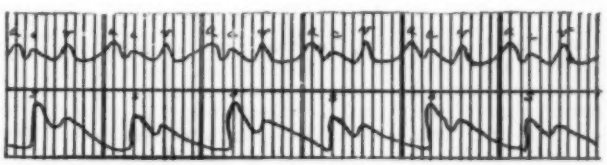

Fig. 7.—Alternating pulse. Note alternate variation in height of systolic waves—*S*, with even time distance between the waves. The venous pulse is normal. There is here an irregularity of force (contractility) but not of rhythm.

SUMMARY

To sum up, we must note the following points:

1. A disturbance of cardiac rhythm does not, in itself, indicate a bad prognosis.

2. A disturbance of cardiac rhythm in itself is no indication for the institution of treatment directed to the heart.

3. It is necessary to analyze a cardiac irregularity, so as to determine which of the types mentioned in Table 1 is present, for the prognosis and treatment depend on the type of disturbance. While for purposes of research, close study and further elucidation of the cardiac irregularities, they should be analyzed with the aid of polygraphs and electrocardiograms, it is, nevertheless, in most cases quite possible to determine which type of irregularity we are dealing with by the use of a simple

Jacquet or Dudgeon sphygmograph, instruments that can be conveniently carried in the pocket. Indeed, after a little experience with such an instrument it becomes possible to judge the type of irregularity present by the simple finger palpation of the radial pulse combined with stethoscopic examination of the heart.

4. Do not rush to digitalis as soon as a pulse irregularity is discovered, for in most of the types it is contraindicated.

5. When auricular fibrillation accompanies symptoms of cardiac failure, digitalis is the drug strongly indicated.

6. When, in case of cardiac failure, you are certain that digitalis is required, use it in sufficiently large doses and get a good fresh preparation. The chief reason that the infusion is more often effective than the other preparations is that it is used in larger doses. Thus, few of us prescribe less than half-ounce doses of the infusion, given three times a day, yet few prescribe as high as four minimum doses of the fluidextract three times a day, although it is no more than the equivalent of the half ounce of infusion.

229 West One Hundred and Eleventh Street.

THE INCIDENCE OF SEROFIBRINOUS PLEURISY AND EMPYEMA AS COMPLICATIONS AND SEQUELÆ OF PNEUMONIA, WITH REMARKS ON THEIR MEDICAL TREATMENT *

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AND
ARTHUR C. MORGAN, M.D.
PHILADELPHIA

It is admittedly desirable that the guess methods relating to the incidence of both serofibrinous pleurisy and empyema as complications and sequelæ of pneumonia should give way at the earliest possible moment to exact knowledge. It has been the current professional impression that pleurisy is the most common complication of the pneumonic process, but it must be confessed that there is no available statistical evidence to confirm it fully. Again, the precise definition of the term empyema is free from difficulty, it being applicable to a collection of pus in the pleura, however small, while that of serofibrinous pleurisy secondary to pneumonia is distinctly difficult.

In our view, pleurisy in the clinical sense should be regarded as a complication when it co-exists, either as a severe form of the dry plastic variety with marked friction to auscultation or accompanied by sufficient effusion to be demonstrable by means of the physical signs. On the contrary, the slight dry pleurisy which is ordinarily associated with pneumonia is to be looked on as a part of the usual pathologic picture of the disease.

In all cases in which a pleural exudate is obtainable, an etiologic distinction between the recognized varieties is to be based alone on a bacteriologic examination. In the case of empyema, more particularly when it occurs in children, it may happen that the area of lung-consolidation is small, hence effectually cloaked by the secondary empyemic process. Unless a bacteriologic study is made of all pleural exudates, the cases last described would fail to be recognized as being of pneumococcic or secondary origin.

In general, it may be authoritatively stated that serofibrinous pleurisy is of more frequent occurrence than empyema in lobar pneumonia, a dictum strongly supported by the present statistical inquiries, as will be seen hereafter. It has been found that ante-mortem observations show a smaller percentage of complicating fibrinous and serofibrinous pleurisies relatively than post-mortem figures, for the apparent reason that the lighter graded of these varieties escape observation during the life of the patient. In the case of empyema, however, this discrepancy would appear to be less marked.

A post-mortem examination has frequently revealed an associated pleuritis entirely unsuspected, since this complication often has an insidious onset without either the usual "stitch-like" pain in the involved side or showing any effect on other phenomena belonging to the primary disease. The physical signs, although well-known, merit extended and careful investigation and, should doubt remain as to the diagnosis of complicating pleurisy, an exploratory puncture should be undertaken without delay. It is particularly true of the pleuritis which is secondary to pneumonia in children that while the withdrawn fluid may be serous at first, it soon becomes purulent. The transition, however, is not to be ascribed to a secondary invader but to the action of the pneumococcus.

The statistical observations which form the basis of the present paper embraced an examination of 68,982 clinical and post-mortem records, from which we culled 2,512 cases of pneumonia and found that of these, 1,335 presented complications. In the 2,512 cases of pneumonia, serofibrinous pleurisy occurred in 198 and empyema in 68.

A total of 68,520 clinical case reports, exclusive of 462 post-mortem records, for which no clinical notes could be found, were carefully scrutinized with the following result: Total number of cases of pneumonia, 2,050, in which 890 presented complications and of which 128 were instances of serofibrinous pleurisy and 41 of empyema.

The large number of cases of pleural effusion associated with pneumonia, or 169, in which the date of onset could be determined, promised us the opportunity we desired to determine the relative frequency of the different forms of pleurisy, both during the course of pneumonia and as sequelæ. It was necessary to discard a small proportion in which the notes, especially with relation to time of occurrence of the crisis, were imperfect or failed to show the day of onset of the pleuritis. It is not claiming too much to state that it was necessary to lavish extreme care and patience on the work of scrutinizing the histories in order to determine the date on which the pleurisy or empyema in question in each individual case commenced.

We found that of the 128 cases of serofibrinous pleurisy, 106 occurred as complications and twenty-two as sequelæ, while of the forty-one cases of empyema, twenty-four were classed as complications and seventeen as sequelæ. These figures indicate that serofibrinous pleurisy occurs in 5.12 per cent. as a complication and 1.07 per cent. as a sequel of pneumonia. Serofibrinous pleurisy as indicated by these collective investigations is of much more frequent occurrence secondary to lobar pneumonia than empyema, the ratio being 3 to 1 in favor of the former condition. Empyema occurred in forty-one out of 2,050 cases, or 2 per cent., and it will be observed somewhat more frequently as a complication than as a sequel.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

Considering a total of 462 cases of pneumonia occurring at the Philadelphia Hospital, in which the autopsy records alone were consulted, we found that complications were mentioned in 445 instances, of which eighty-eight or 19 per cent., were pleurisy with effusion, e. g., seventy cases of serofibrinous character and eighteen of purulent character.

An analysis of 858 cases from the same institution, in which the clinical records were also scrutinized, showed complications in 404 cases, of which only thirty-nine were instances of pleural effusion. Of the latter, in thirty-four the exudate was serofibrinous, and in five, purulent. Among the thirty-four cases of serofibrinous pleurisy, twenty-five were classed as complications and nine as sequelæ, while all of the empyemas were complications, i. e., occurring before the crisis.

The total number of records examined at the Protestant Episcopal Hospital (see table) were 1,085. Of these, 464 showed complications, of which 124 were pleurisies, ninety-one serofibrinous and thirty-three purulent. Of the serofibrinous form, seventy-eight were complications and thirteen sequelæ, while of the thirty-three purulent, eighteen were complications and fifteen sequelæ.

The accompanying table will enable the reader to make a ready comparison between the figures obtained from the different institutions, which are there represented; and it also reveals at a glance the total number of records consulted, the number of cases of pneumonia from all sources, the number of instances in which complications were mentioned and the relative number of cases in which serofibrinous and purulent pleurisy, both as complications and sequelæ, occurred.

Name of Hospital	Records Consulted	Total number of pneumonias	Complications mentioned	Serofibrinous		Purulent	
				Complications	Sequelæ	Complications	Sequelæ
Philadelphia General	41,377	858	404	25 (2.9%)	9 (1.05%)	5 (0.58%)	0 .....
Protestant Episcopal	24,795	1,085	464	78 (7.19%)	13 (1.2%)	18 (1.66%)	15 (1.38%)
Medico-Chirurgical ..... (Recent records)	2,348	107	22	3 (0.28%)	0	1 (0.093%)	2 (0.196%)
Total	68,520	2,050	890	106 (5.12%)	22 (1.07%)	24 (1.17%)	17 (0.83%)

The figures of Musser and Norris[1] showing the results of their collective investigations, based on clinical observations, are quite in harmony with those given above. Thus, out of a total of 24,511 cases, studied by them, pleural effusion occurred in 1,535, or 6.26 per cent. On the other hand, the collected cases from autopsy records by these observers are at variance with our own results. For example, they found pleural effusion in 405 out of 974 necropsy records, or 41.58 per cent., while we found in 462 autopsy reports of pneumonia occurring at the Philadelphia Hospital (see above) only eighty-eight instances of pleural effusion, or 19 per cent.

Thomas McCrae stated in a personal communication that out of twenty-nine cases of empyema secondary to lobar pneumonia, twenty-five were classed as complications and only four as sequelæ. These figures indicate a much larger preponderance of empyemata occurring as complications in pneumonia than as sequelæ, thus differing from the results of our collective investigations, e. g., in a total of forty-one cases, twenty-four developed prior to the occurrence of the crisis and seventeen were distinctly postcritical.

1. Osler: Modern Medicine, ii, 597.

TREATMENT

In non-pneumococcic pleurisy of the serofibrinous variety, it is the custom of many clinicians to aspirate early, and we believe that the disease has in the past been too conservatively treated. When we are dealing with either serofibrinous pleuritis or empyema occurring secondary to pneumonia, however, an expectant method, unless thoracentesis be urgently needed, is to be adopted until the crisis has been passed, but if the latter fail to appear at the proper time, then the exudate should be promptly withdrawn. On the other hand, if a critical decline of temperature takes place in due season, a serofibrinous effusion is quickly absorbed in some cases at least, but if not, then recovery must be enhanced by puncture followed by aspiration.

If a massive effusion develop during the fastigium of pneumonia, displacing the heart and other adjacent organs, or if under these circumstances signs of involvement of the non-affected side, such as moist râles, broncho-vesicular breathing and impaired resonance arise, and finally, serious symptoms such as urgent dyspnea or syncopal attacks with cyanosis manifest themselves, the withdrawal of the exudate is to be advised. Such cases, however, may demand more radical operative measures for their cure after the usual crisis, and these should not be too long withheld. Aspiration during the fastigium is a procedure calculated to do harm on account of the slight shock induced by it, hence it should be undertaken only in cases presenting large pleural collections which give rise to the untoward effects already stated.

We desire to state with emphasis that our results from aspiration for pleural effusion in pneumonia prior to the crisis, in patients that have been desperately ill, have been decidedly discouraging.

The aim in the treatment of individual cases of pneumonia in which pleurisy in one of its different forms is associated, is to secure the largest possible degree of comfort to the patient and the withdrawal of the exudate, if it should occur, at the earliest moment compatible with safety to life.

The indications for the use of medicinal substances in complicating pleurisy are few, and nothing in the nature of a depressant, especially such as the coal tar products, is permissible since pneumonia, the primary disease, debilitates every organ of the body, notably the heart. To be avoided also, therefore, are the salicylates, although these as well as quinin and opium exercise a more or less favorable effect in serous pleuritis in general. Opium is also open to objection in the more

advanced stages of pneumonia, especially should the bronchi contain secretory products, since the drug exerts a drying effect, thus hindering their dislodgment. A pneumococcus pleuritis may develop and accompany the pneumonic process from the beginning in which case opium may have great usefulness as a therapeutic agent in the earlier stages, relieving the pain and inducing repose.

Experience dictates that quinin has a beneficial influence on inflamed serous membranes, and it possesses a limited value at least, in the pleuritis of pneumonia, both as a supportive agent and in mitigating the intensity of the inflammatory process. It may be administered in 4 gr. doses in capsule, followed immediately by a few drops of dilute hydrochloric acid to insure its prompt solution, four times daily.

LOCAL MEASURES

In cases of pneumonia in which severe pains due to associated pleuritis develop early, fixation of the affected area by means of strips of adhesive plaster is an effective and feasible measure. These should be, however, removed in the event of the occurrence of effusion. The use of morphin in small doses, administered hypodermically, is not objectionable during the earlier stages of pneumonia, if demanded for the relief of intense pains that remain unrelieved by immobilization of the side involved. On the other hand, in light grades of associated pleurisy, counter-irritation by means of sinapisms is to be advised. In the adult, if the patient's nervous system be not too sensitively organized, cold applied in the form of an ice-bag or ice-water bag, or better still cold compresses reapplied at least every hour, as suggested by Baruch, with the least possible disturbance to the patient, is a remedy of choice.

We are quite convinced of the extreme importance of affording prompt relief of the pain, so as to enable the function of respiration to be carried on the more actively, and thus also to preserve the nervous tone and equilibrium of the patient.

In concluding, our best thanks are due to Drs. H. Leon Jameson, Harry W. Bauer and Ernest E. Laubaugh, for material assistance in collecting the statistical data presented above.

1605 Walnut Street.

ABSTRACT OF DISCUSSION

Dr. J. N. Hall, Denver: I wish to comment on a series of sixty-two cases of empyema seen in my private and consultation practice in the past nine years, with a view of urging the necessity of earlier diagnosis. I have to thank my assistant, Dr. T. R. Love, for compiling this brief record. Many of these cases were seen weeks or months after the beginning of the disease, and no less than thirteen of them ruptured through the lung. That is, of course, explained by the fact that in the simple and easily recognized cases operations were done at home, while in many of the obscure the patients came far, often from other states, for investigation. Twenty-two of the sixty-two patients died—a frightful mortality, and far higher than the average, because of the character of the material. Thirty-four of these cases followed an acute pneumonia; eight were found to be tuberculous patients, often originating, doubtless, in pneumothorax; five were associated with bronchopneumonia; three succeeded a simple pleural effusion; three followed an ascending infection from appendicitis; two occurred in cases of measles; two after injury to the chest; while one case was found in association with each of the following conditions: General sepsis; perforation of an infected gallbladder in typhoid fever; gangrene of the lung; sarcoma of the pleura; lipoma of the pleura (no exact cause was determined in the latter two cases). Twenty-nine of the cases were right-sided, thirty were left-sided, while three were not noted. There were forty-four males and but eighteen females.

The earlier and freer use of the exploring needle should prevent such humiliation as we must all feel over such a mortality rate as that quoted, and over such a number of perforations through the bronchi. No case should be allowed to drift with fever and obscure chest symptoms without well-considered and applied exploration. I have finally found pus at the thirteenth puncture under anesthesia in a case in which previous less persistent investigation had failed to reveal it, and the man is well to-day. Yet certain cases of empyema deep in the chest, either between the lobes or on the diaphragm, may go on to rupture or death without such external signs as to lead to their detention even by fairly expert clinicians. Such instances should, however, be rare. I wish to reiterate the importance of more persistent attempts to find the pus in cases of obscure chest disease, with fever and leukocytosis, and to urge the danger underlying the diagnosis of "unresolved pneumonia," "thickened pleura," etc. If not cleared up by one or two punctures, it is better, if we can be reasonably certain that pus is present somewhere in the chest, to give an anesthetic with everything prepared for operation and systematically explore the chest until pus is found. The drainage by the surgeon is often a far less formidable procedure than the finding of the purulent focus. We have from 15 to 20 per cent. of the total population of Denver who have come to us because of some form of disease; many of them have some changes in the chest such as an empyema, or the results of perforation, or lung abscess. I have seen a general streptococci infection resulting from the injection of some sort of a vaccine. It was afterwards learned that the needle was stuck into the lung; as a result an empyema developed and the patient died. As to any damage to the lung itself by exploration, I have never seen serious trouble.

Dr. Everett J. Brown, Decatur, Ill.: I think there is one crime which we can frequently hold against the general practitioner and that is the failure to recognize fluid in the chest. In consultation work in a country district I find many cases of empyema and other pleuritic exudates unrecognized. I recently saw a case of empyema in a young man, age 16 years, in which the amount of pus was so enormous as to cause actual deformity from the bulging of that side of the chest. I removed 7 pints by aspiration on one day and three days later 8 pints more were removed by drainage. The patient made a good recovery. I recently had two cases of empyema occur simultaneously in the same family; both were young men. The first case followed pneumonia, and the second boy became infected from the first case by blowing through the tubes attached to a James bottle which the first patient was using to expand the lung; pneumonia with empyema which required drainage occurred. Both patients recovered.

Dr. C. F. Hoover, Cleveland: A very good practice in examining patients with suspected disease of the pleuræ is to auscultate with the unaided ear. If this practice is adhered to it will be found that every accumulation of fluid in the pleural cavity causes an elevation of pitch of the murmur of inspiration and expiration. The sound may be faint or at times inaudible on account of thickening of the pleuræ, but when the respiratory sounds are audible they are heightened in pitch by the presence of fluid whether it is pus, blood or serum.

Dr. A. C. Morgan, Philadelphia: The discussion, it seems to me, has resolved itself into a study of the physical signs. It has, however, been immensely profitable. In the paper presented there were without any doubt many sins of omission as well as of commission; these may occur in attempts at making a diagnosis of a pleuritic exudate, no matter of what type, and may occur through carelessness or through ignorance, or through an improper interpretation of what is found in the physical examination of the chest. In teaching physical signs in the chest to students I have found that it is very hard to get them to study those that are normal; but they are always very eager to study the signs that are abnormal. Place a student to examine a normal chest and he soon assumes an air of satiety; he turns from it and it is very hard to keep his attention. But when given a chest to examine that is abnormal he is delighted and listens to what can be heard, although he is not fitted to interpret properly what he finds. I think,

too, that general practitioners have this same fault; they will not study the normal conditions found in the chest; they do not maintain in their minds what is real and what is abnormal. The best way, I believe, to teach what is abnormal is first to insist on the students being taught what is the normal. They should be made to learn what is the normal; they should be made to become familiar with the normal conditions. If you can satisfy yourself that you know what is normal, then when you strike something that is abnormal, your interest will be aroused, and you will proceed to study the case along definite and concrete lines. I wish to make a plea that we get back of this and learn first the normal; then when we find something that is not normal we shall be in a better position to study our cases intelligently.

EOSINOPHIL CELLS AND POLLEN IN VERNAL CATARRH

BROWN PUSEY, M.D.
CHICAGO

In April, 1911,[1] I reported the finding of eosinophil polymorphonuclear leukocytes in smears taken from a series of cases of vernal catarrh, confirming Herbert's discovery. Interested in this finding and knowing the many points of similarity between vernal catarrh and the conjunctivitis of hay-fever, I have been led to the examination of smears taken from a series of cases of the latter disease.

In smears taken from the conjunctivæ of a series of cases of hay-fever, I have found eosinophil polymorphonuclear leukocytes in great abundance; indeed the cellular content of a smear from the one disease is the same as that from the other.

This observation shows another, and possibly a very important, similarity between the two diseases. We know that the conjunctivitis of hay-fever is due to pollen. From my observation of eosinophil cells in the conjunctival secretion of hay-fever, we know that pollen may cause an inflammation of the conjunctiva with secretion containing an abundance of eosinophil cells. This fact becomes of increased interest when it is realized that eosinophil cells are a negligible factor, as was shown in my previous work, in smears from all ordinary forms of conjunctivitis.

It is in the field of etiology of vernal catarrh (an unknown field) that the finding of these cells in hay-fever is of interest. I venture to think that the presence of eosinophil cells in the conjunctivitis of hay-fever and in vernal catarrh, and their absence in ordinary forms of conjunctivitis, point strongly to a similar etiologic factor—pollens.

7 West Madison Street.

Screw-Worms in the Ear.—Dr. W. S. Lorimer, Handley, Tex., writes: "A few days ago I was called to see a female child, 4 months old, who had been peevish and fretful for two days previous. She was well nourished, apparently healthy, being breast-fed and having healthful and sanitary surroundings. The history was negative, except for irritability and fretfulness for two days. There had been no previous illness. On examination, a small, white, moving object was seen in right ear, which proved later to be a screw-worm. Chloroform was applied to the ear, and, on irrigating with boric acid solution, three screw-worms came out. The child recovered and is well and healthy. I cannot imagine how this condition can occur in children in such sanitary surroundings."

1. Pusey, Brown: Vernal Conjunctivitis and Eosinophil Cells, THE JOURNAL A. M. A., April 1, 1911, p. 952.

AN ARTHROPLASTIC OPERATION FOR HAMMER-TOE

B. J. O'NEILL, M.D.
SAN DIEGO, CAL.

The following case is reported both on account of the good result secured and because, so far as is known to me, it is the first attempt to adapt Murphy's arthroplastic operation to hammer-toe.

History.—The patient, a woman of 22, came to me in January, 1911, with a hammer-toe, which had been present since childhood and which caused her great pain on walking.

Examination.—The third toe of the left foot was a typical and very marked hammer-toe, with a tender callus on the top of the first and on the bottom of the second joint, the adjoining toes almost touching in front of the vertical second phalanx and above the terminal phalanx, and an almost complete ankylosis of the first phalangeal joint. A general examination was negative.

Treatment.—I advised amputation, which was refused. As the patient insisted on trying some conservative operation, it occurred to me that the operation I had seen Dr. J. B. Murphy do on an ankylosed knee-joint might be repeated on a small scale here.

Operation.—Accordingly, under general anesthesia, I made a longitudinal incision about an inch long on the dorsal surface of the toe, its middle over the prominence of the joint, freed the bone from the soft parts, and removed the distal end of the first and the proximal end of the second phalanx for a distance of about one-fourth inch each. I then dissected loose a thin layer of the subcutaneous tissues at the outer side, cut it loose at its distal end so as to make a flap with the pedicle at the proximal end, passed this across between the two bones and sutured it by one stitch each to the inner side, below and above. I then closed the skin wound with a subcuticular silkworm gut and fastened foot and toe by adhesive strips to a specially prepared splint in such a way as to hold the toe perfectly straight.

Result.—Immediately after the operation, the joint was flail-like and the soft parts loose and baggy, but they gradually contracted down and backward, making the toe slightly shorter than its fellows and but little above the normal size. It remained tender for some time but this soon passed over and the healing was complete in about three weeks. I had feared recurrence on account of the pinching in of the toes on either side but the slight shortening of the toe seems to have prevented this. At the present time, six months after the operation, the toe is only slightly thickened at this joint, straighter than any other toe on the foot, and gives the patient no pain or discomfort whatever. There seems to be a new joint developed at the point, as there is fully as much mobility, both active and passive, as in the other toes.

Sefton Block.

Therapeutics

PRESCRIPTION WRITING

(*Continued from page 1135*)

CHAPTER II.—OFFICIAL PREPARATIONS

The principal preparations of the United States Pharmacopeia may be classified as follows:

1. Solids mostly for internal use:
   - A. Extracts (extracta).
   - B. Pills (pilulæ).
   - C. Powders (pulveres).
2. Liquids mostly for internal use:
   - A. Waters (aquæ).
   - B. Elixirs (elixira).
   - C. Emulsions (emulsa).
   - D. Fluidextracts (fluidextracta).
   - E. Infusions (infusa).

F. Liquors (liquores).
G. Mixtures (misturæ).
H. Spirits (spiritus).
I. Syrups (syrupi).
J. Tinctures (tincturæ).

3. Semisolids for external use:
A. Cerates (cerata).
B. Ointments (unguenta).

4. Liquids for external use:
A. Liniments (linimenta).
B. Some waters (aquæ).
C. Some liquors (liquores).
D. Some tinctures (tincturæ).

1. Solids Mostly for Internal Use

A. *Extracts* are concentrated preparations of a drug, and are mostly moist and sticky. A few extracts are dry. They should be prescribed in pill or capsule.

The most important are:

Extractum belladonnæ foliorum	Dose, 0.01 gm. or gr. 1/6
Extractum digitalis	Dose, 0.01 gm. or gr. 1/6
Extractum ergotæ	Dose, 0.25 gm. or gr. iv
Extractum nucis vomicæ	Dose, 0.01 gm. or gr. 1/6
Extractum physostigmatis	Dose, 0.01 gm. or gr. 1/6
Extractum rhamni purshianæ	Dose, 0.25 gm. or gr. iv
Extractum opii	Dose, 0.03 gm. or gr. 1/2

B. Official *pills* are ready-made preparations, and consequently it should be remembered that they may have deteriorated or become more or less insoluble. Still some of the laxative pills, especially, are of value.

The following is a ready reference to the ingredients of the most used pills:

Blaud's pills (pilulæ ferri carbonatis) contain 0.065 gm. (1 gr.) of iron.

Pills of aloes (pilulæ aloes) contain 0.13 gm. (2 gr.) of aloes.

Pills of aloes and iron (pilulæ aloes et ferri) contain 0.065 gm. (1 gr.) each of aloes and iron.

Compound cathartic pills (pilulæ catharticæ compositæ) contain extract of colocynth comp. 0.08 gm. (1¼ gr.); calomel 0.06 gm. (1 gr.); resin of jalap 0.02 gm. (⅓ gr.); gamboge 0.015 gm. (¼ gr.).

Vegetable cathartic pills (pilulæ catharticæ vegetabiles) contain extract of colocynth comp. 0.06 gm. (1 gr.); extract of hyoscyamus 0.03 gm. (½ gr.); resin of jalap 0.02 gm. (⅓ gr.); extract of leptandra 0.015 gm. (¼ gr.); resin of podophyllum 0.015 gm. (¼ gr.).

Compound laxative pills (pilulæ laxativæ compositæ) contain aloin 0.013 gm. (1/5 gr.); strychnin 0.0005 gm. (1/120 gr.); extract of belladonna leaves 0.008 gm. (⅛ gr.); ipecac 0.004 gm. 1/15 gr..

Compound podophyllum pills (pilulæ podophylli, belladonnæ et capsici) contain resin of podophyllum 0.016 gm. (¼ gr.); extract of belladonna leaves 0.008 gm. (⅛ gr.); capsicum 0.032 gm. (½ gr.).

Compound rhubarb pills (pilulæ rhei compositæ) contain rhubarb 0.13 gm. (2 gr.); aloes 0.10 gm. (1½ gr.); myrrh 0.06 gm. (1 gr.).

C. Official *powders* are dry preparations of two or more drugs. It is better to order a powder by its official title, but below are the common names and the ingredients of the most used of these preparations:

Dover's powder (pulvis ipecacuanhæ et opii) contains 10 per cent. each of ipecac and opium.

Tully's powder (pulvis morphinæ compositus) contains 1.5 per cent. of morphin and 32 per cent. of camphor.

Compound aromatic powder (pulvis aromaticus) is a mixture of aromatics.

Compound jalap powder (pulvis jalapæ compositus) contains 35 per cent. of jalap and 65 per cent. of potassium bitartrate.

Compound licorice powder (pulvis glycyrrhizæ compositus) contains 18 per cent. of senna; 23 per cent. of glycyrrhiza; 8 per cent. of sulphur.

Gregory's powder, compound rhubarb powder (pulvis rhei compositus) contains 25 per cent. of rhubarb; 65 per cent. of magnesium oxid; 10 per cent. of ginger.

Seidlitz powder (pulvis effervescens compositus) consists of two powders; one of Rochelle salt and bicarbonate of soda in blue paper, and the other of tartaric acid in white paper.

2. Liquids Mostly for Internal Use

A. *Waters* are solutions of *volatile* substances in *water;* mostly *weak* preparations. (Exception, ammonia waters.)

H. *Spirits* are solutions of *volatile* substances in *alcohol;* mostly *strong* preparations. (Exception, sweet spirits of niter.)

F. *Liquors* are solutions of *non-volatile* substances in *water;* mostly *weak* preparations. (Exceptions, the arsenic solutions and those for external use.)

J. *Tinctures* are solutions of *non-volatile* substances in *alcohol;* mostly *strong* preparations. (Exceptions are the aromatic and stomachic [bitter] drug tinctures.)

H. Some of the common names of spirits are:

Whisky (spiritus frumenti).
Brandy (spiritus vini gallici).
Sweet spirits of niter (spiritus ætheris nitrosi).

F. Some of the common names of liquors are:

Fowler's solution (liquor potassii arsenitis).
Spirit of Mindererus (liquor ammonii acetatis).
Lugol's solution (liquor iodi compositus).
Goulard's solution (liquor plumbi subacetatis).
Labarraque's solution (liquor sodæ chlorinatæ).

B. *Elixirs* are sweetened liquid preparations containing alcohol. They are weak preparations, and the National Formulary contains a large number.

C. *Emulsions* are liquid preparations containing a suspended oil.

D. *Fluidextracts* are liquids representing exact strengths of the drugs, i. e., 1 cubic centimeter (15 minims) contains the medicinal properties of 1 gram (15 grains) of the drug.

E. *Infusions* are weak watery preparations. One only is of value, viz., infusum digitalis.

G. *Mixtures* are liquids containing more than one drug, often an insoluble one. The most used are:

Brown mixture (mistura glycyrrhizæ compositus).
Chalk mixture (mistura cretæ).

The National Formulary contains a long list of mixtures.

I. *Syrups* are very sweet watery solutions of one or more drugs. These weak preparations are prescribed too frequently, as they readily cause disturbance of the stomach, and do not often modify a bad-tasting drug, but may even protract the taste. Sweet cough syrups are an abomination.

3 Semisolids for External Use

A. and B. The principal difference between *cerates* and *ointments* is their melting-points. The ointments contain more lard or petroleum fat and less wax than the cerates, hence they have a lower melting point than the latter. Cerates do not melt when applied to the skin.

4. Liquids for External Use

Some *waters*, some *liquors*, some *tinctures* and the *liniments*, as the name implies, are used externally only. Most of the liniments are stimulating to the skin, but two being sedative, viz., the belladonna liniment and the carron oil (linimentum calcis).

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

PEROXIDES OF METALS

Metallic peroxides are compounds in which the hydrogen of hydrogen peroxide has been replaced by metals, and which are readily decomposed with liberation of hydrogen peroxide, or of oxygen in an active state. The peroxides of several metals have been suggested as substitutes for the hydrogen peroxide solution, official as aqua hydrogenii dioxidi.

The commercial products are usually mixtures containing but a limited amount of real peroxide; for example, commercial "magnesium peroxide" contains but about 15 per cent. of magnesium peroxide while commercial "sodium peroxide" contains about 75 per cent. of sodium peroxide.

The different peroxides vary considerably in their stability, their solubility and in their ease of decomposition in solution. In solutions of acids the peroxides are decomposed, forming hydrogen peroxide and the salt of the metallic radicle of the peroxide. In this way the entire active oxygen-content of the peroxide is quickly made available in the form of hydrogen peroxide in solution. Water dissolves only minute quantities of these peroxides, but it decomposes them with varying degrees of readiness. Thus zinc peroxide, although very insoluble, is decomposed by water into zinc hydroxide and hydrogen peroxide as follows:

$$ZnO_2 + 2H_2O \rightarrow Zn(OH)_2 + H_2O_2$$

The energy of the oxidizing powers of different peroxides varies in direct ratio to the alkalinity of the solution produced in their decomposition. The variation in the alkalinity of the solutions formed affects the therapeutic uses of the peroxide. Sodium peroxide is not desirable for therapeutic use because of the formation of the strongly alkaline solution of sodium hydroxide (caustic soda). Magnesium and zinc peroxide, on the other hand, yield weakly alkaline solutions and are for that reason more desirable.

Actions and Uses.—Like hydrogen peroxide, the metallic peroxides depend for their value on the readiness with which a part of their oxygen becomes active. They are claimed to possess advantages over solution of hydrogen peroxide, because the oxygen is set free more gradually. Among themselves the metallic peroxides differ in their action in accordance with their solubility and the alkalinity produced by interaction of the peroxid with water. The action of peroxides is also affected by the nature of the metal which goes into solution when the peroxid is decomposed. Thus the use of sodium peroxide is limited by the strong base formed when it dissolves in water and that of zinc peroxide by the poisonous action of zinc solutions.

Because of the strong oxidizing effects on the lower organisms, the peroxides have been recommended as a convenient means of sterilizing water, thus a mixture has been used containing magnesium peroxide 0.2 Gm. and tartaric acid 0.5 Gm., the latter favoring the decomposition of the peroxide. It has been proposed to employ the oxidizing effect of peroxides in the treatment of skin diseases, by using a mixture of zinc peroxide, 10 parts; potassium iodide, 5 parts, and tartaric acid, 1 part from which on contact with moisture iodine is gradually liberated. As an ingredient of dentifrices magnesium and strontium peroxide have been used.

Internally the peroxides have been claimed to be of value as gastric and intestinal antiseptics and to be of use in the treatment of acid dyspepsia, abnormal fermentation and summer diarrhea of infants.

CALCIUM PEROXIDE—Calcii Peroxidatum.—Calcium peroxide is a mixture consisting essentially of calcium peroxide, the calcium salt CaO_2, of hydrogen peroxide and calcium hydroxide and carbonate, containing not less than 60 per cent. calcium peroxide, equivalent to 13.4 per cent. available oxygen.

Calcium peroxide is a light, cream-colored, odorless and tasteless powder. It is practically insoluble in water, but by such contact it is gradually decomposed into hydrogen peroxide and calcium hydroxide, the hydrogen peroxide being further decomposed by the alkaline calcium hydroxide with liberation of oxygen. It is decomposed by dilute acids with formation of a solution containing hydrogen peroxide.

If a few milligrams of calcium peroxide be shaken with 10 Cc. water and 1 drop diluted sulphuric acid, and a few Cc. ether added, the subsequent addition of a drop of potassium dichromate solution will produce a blue color in the aqueous layer. On shaking, the blue color will pass into the ethereal layer.

If 1 Gm. calcium peroxide be dissolved in 25 Cc. dilute nitric acid and 2 Cc. tenth-normal silver nitrate added to the solution and the resulting precipitate filtered off, the further addition of a few drops of silver nitrate solution to the filtrate should produce not more than a turbidity.

If 1 Gm. calcium peroxide be exposed to the full heat of a Bunsen flame for five minutes, then dissolved in 25 Cc dilute hydrochloric acid and the solution made up to 100 Cc., a solution will result which will conform to the following tests:

Ten Cc. of the solution, to which ammonium hydroxide in excess has been added, should yield a white precipitate on the addition of ammonium oxalate solution.

Ten Cc. of the solution saturated with hydrogen sulphide should yield no precipitate, nor become colored.

Ten Cc. of the solution should yield not more than a turbidity on the addition of barium chloride solution.

Ten Cc. of the solution, after addition of a slight excess of ammonium hydroxide and acidification with acetic acid, should yield no turbidity on the addition of potassium dichromate solution.

If 0.2-0.3 Gm. calcium peroxide, weighed into a flask, be shaken with 25 Cc. water, then 25 Cc. dilute hydrochloric acid added, the titration of this solution with tenth-normal potassium permanganate should indicate the presence of not less than 60 per cent. calcium peroxide. (One Cc. tenth-normal potassium permanganate is equivalent to 0.0036 Gm. CaO_2).

Actions and Uses.—See Peroxides.

Dosage.—0.06 to 0.3 gm. (1 to 5 grains) in water or with sodium bicarbonate, two to three times daily.

Calcium Peroxide, R. & H.—Manufactured by the Roessler & Hasslacher Chemical Co., New York. Not patented or trademarked.

MAGNESIUM PEROXIDE.—For properties, actions, uses and dosage see New and Nonofficial Remedies; also THE JOURNAL A. M. A., Feb. 25, 1911, p. 591.

Magnesium Peroxide, R. & H.—Manufactured by Roessler & Hasslacher Chemical Co., New York. Not patented or trademarked.

SODIUM PEROXIDE.—For properties, actions, uses and dosage see New and Nonofficial Remedies, 1911, p. 209.

STRONTIUM PEROXIDE—Strontium Peroxidatum.—Strontium peroxide is a mixture consisting essentially of strontium peroxide, the strontium salt, SrO_2, of hydrogen peroxide and strontium hydroxide containing at least 84.5 per cent. strontium peroxide, equivalent to 11.3 per cent. available oxygen.

Strontium peroxide is a fine, white, odorless and tasteless powder. It is practically insoluble in water, but by such contact is gradually decomposed into hydrogen peroxide and strontium hydroxide, the hydrogen peroxide being further decomposed by the alkaline strontium hydroxide with liberation of oxygen. It is decomposed by dilute acids with formation of a solution containing hydrogen peroxide.

If a few milligrams of strontium peroxide be shaken with 10 Cc. water and 1 drop dilute sulphuric acid, and a few Cc. of ether added, the subsequent addition of a drop of potassium dichromate will produce a blue color in the aqueous layer. On shaking, the blue color will pass into the ethereal layer.

If 1 Gm. strontium peroxide be dissolved in 25 Cc. dilute nitric acid and 2 Cc. tenth-normal silver nitrate added to the solution and the resulting precipitate filtered off, the further addition of a few drops of silver nitrate solution to the filtrate should not produce more than a turbidity.

If 1 Gm. strontium peroxide be exposed to the full heat of a Bunsen flame for five minutes, then dissolved in 25 Cc. dilute hydrochloric acid and the solution made up to 100 Cc., a solution will result which will conform to the following tests:

Ten Cc. of the solution made alkaline by the addition of ammonium hydroxide and then slightly acid with acetic acid should yield a white precipitate on the addition of ammonium sulphate solution.

Ten Cc. of the solution saturated with hydrogen sulphide should yield no precipitate nor become colored.

Ten Cc. of the solution should yield not more than a turbidity on the addition of barium chloride solution.

Ten Cc. of the solution which has been made alkaline with ammonium hydroxide and then acidified with acetic acid should yield no turbidity on the addition of potassium dichromate solution.

If 0.2-0.3 Gm. strontium peroxide, weighed into a flask, be treated with 50 Cc. water and dissolved by addition of 20 Cc. dilute sulphuric acid, the titration of this solution with tenth-normal potassium permanganate should indicate the presence of not less than 84.5 per cent. strontium peroxide. (1 Cc. tenth-normal potassium permanganate is equivalent to 0.0061 Gm. SrO_2).

Actions and Uses.—See Peroxides.

Dosage.—It is used in the form of ointments and as a dusting powder.

Strontium Peroxide, R. & H.—Manufactured by the Roessler & Hasslacher Chemical Co., New York. Not patented or trademarked.

ZINC PEROXIDE.—For properties, actions, uses and dosage, see New and Nonofficial Remedies, 1911, p. 234.

Zinc Peroxide, R. & H.—Manufactured by the Roessler & Hasslacher Chemical Co., New York. Not patented or trademarked.

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[*For other information see second page following reading matter*]

SATURDAY, OCTOBER 7, 1911

THE PROGRESS OF CHEMOTHERAPY

In an address before the society of microbiology in Dresden[1] last May, Ehrlich drew back the curtain and gave several glimpses of the seething activity with which the new field of chemotherapy is being cultivated at the laboratories in Frankfort. Only one who is familiar with the difficulties and obstacles to be overcome at both the chemical and experimental ends of this work, can fully appreciate the enormous energy and tireless industry to which the abundant results that pour out from the Ehrlich institutions testify.

Evidently the immunity or resistance which parasites acquire to both chemical parasiticides and immune serums has occupied much of the attention of the investigators. Biologists will find much to interest them in the demonstration that once a strain of parasites has acquired such immunity, the descendants of this strain will continue to exhibit the acquired characteristic for an indefinite number of generations, through years at least. Physicians will see in this fact a justification of the fear, which was aroused early in the study of chemotherapy, that in time we may become the prey of parasites which are immune to every known sort of parasiticidal agent. Happily, Ehrlich has discovered that this danger is not imminent, and perhaps our fears are entirely groundless; the escape lies through another observation of profound biologic interest, which may be described as follows: As long as a strain of a parasite immune to a given poison is perpetuated by direct passage from animal to animal, the reproduction is asexual, and the protoplasm is directly continued from generation to generation; in this case the immunity persists. But if by passage through a natural intermediate insect host the parasite is reproduced through sexual conjugation, the new generations are devoid of the acquired specific immunity to the parasiticidal drug. Therefore, since most of the protozoan diseases, at least, are transmitted through intermediate hosts, it is probable that the danger of perpetuation of drug-immune parasites is not serious.

Parasites become immune to serum antibodies much more quickly than to chemical parasiticides, but the immunity to the chemicals is much more difficult to eliminate by experimental means. According to Ehrlich's views, when a parasite becomes refractory to an immune serum it does so by developing new groups of receptors to take the place of those occupied by the antibodies, these receptors being the same receptors as combine with the food materials, and hence called "nutriceptors." But it is possible for the host to develop new antibodies specific for the newly developed receptors, and this alternate counter-immunization may continue until the parasite has exhausted all possible means for producing the new receptors necessary for maintenance of nutrition, when it will be obliged to die out because the serum of the host contains all the different forms of antibodies necessary to combine all the different receptors of the parasite. Experimental evidence has been obtained on which this conception of the counter-reaction of host and parasite is based, and also it has been found that the number of new recurring strains which most parasites can develop is, fortunately, quite limited. To prevent the development of these immune strains it is desirable to produce a complete sterilization of the host with one dose of the therapeutic agent, if possible, but if a parasiticidal agent kills only a fraction of the parasites it still may happen that the antibodies formed in reaction to the killed organisms will be sufficient to destroy the survivors; on this account it may sometimes happen that a therapeutic injection will give more complete destruction of the parasites when these are present in large numbers than it will at earlier stages of the disease when but few parasites are present.

In syphilis the decreasing number of organisms present as the disease advances may be ascribed to the wiping out by specific antibodies of most of the strains present, leaving a few survivors refractory to all the antibodies developed by the host up to that time. The fresh outbreaks of syphilitic lesions are, on this basis, brought about by new strains of the spirochete which have developed immunity to the existing antibodies, and the subsidence of the lesions depends on the formation of a new set of antibodies to combat the new strain. Hence it comes to pass that during the actual existence of syphilitic infection the individual is not susceptible to a new infection, because of the abundance of antibodies present in his blood to which the new strain of spirochetes is not immune. But when the disease is over and the antibodies have been eliminated, reinfection becomes possible. The recurrence of lesions after salvarsan injections, especially in certain nerves, is ascribed by Ehrlich, not to an injury of the nerve tissue by the drug, but to an actual syphilitic lesion set up by organisms present in the nerves, where they are somewhat protected from the salvarsan, so that after the drug has been sufficiently eliminated they multiply and set up local lesions. The best protection against this form of complication will be early treatment, before such localization has occurred.

1. Ehrlich: Folia Serologica, 1911, vii, 697.

Certainly this address, as well as the numerous papers that have recently appeared from Ehrlich's workshops, carries the conviction that the progress in chemotherapy is being based on most sound and careful experimental work, and that as yet this work, large as its results already are, is still in the earliest preliminary stages. We have every right to look for more brilliant results in the future. The fear expressed that in diseases with local lesions chemotherapy must be less successful than in such blood infections as trypanosomiasis and similar diseases with which most of the experiments have been conducted, is already discounted by the highly successful results obtained by many in the treatment of frambesia or yaws.

STANDARDIZATION OF ERGOT

Another important contribution[1] to the subject of the physiologic standardization of drugs has been made by the Hygienic Laboratory of the Public Health and Marine-Hospital Service. The authors conclude, both from their own work and from that of others, that the proposed chemical methods of assay throw little light on the therapeutic value of a preparation of ergot. This view seems now to be accepted by most manufacturers. Thus a member of a firm which has been laying much emphasis on the fact that its product was assayed by the cornutin of Keller (which, the firm said, it had found to be a "trustworthy guide as to the therapeutic strength of the drug"), states that "he has come to the conclusion that cornutin assay is not a criterion of therapeutic value."

Three principal methods have been proposed for the physiologic standardization of ergot, the cock's comb, the uterine, and the blood-pressure methods; all are in use and the chief object of the present work was to determine which is the most trustworthy. Inasmuch as ergot is ordinarily used for the purpose of influencing the activity of the uterus, the authors considered that a method based on the effects of the drug on this organ would have the most value. They found that different observers, working independently of each other, were by this method able to obtain concordant and satisfactory results. It is, however, tedious and somewhat expensive, and the authors were gratified to find a close parallelism between the results obtained by this method and those obtained by the "cock's comb method," which was introduced into this country some years ago by Houghton. No constant relation was found between the results obtained by these methods and the effects on the blood-pressure, a result readily explained by the fact that ergot contains, in varying amounts, certain amins which have a greater action, proportionately, on the blood-pressure than on the uterus.

The authors recommend for practical purposes, the cock's comb method. It is suggested that ergotoxin, one of the alkaloids of ergot, may be taken as a standard and that the strength of fluidextracts may be adjusted so that 2 c.c. equals in physiologic action 5 mg. of ergotoxin.

The primary object of the bulletin was to test the value of the various methods. The subject in which the practitioner is most interested, the comparative value of the preparations of ergot on the American market, received less attention; but some of the results are of much interest from this point of view. The preparations examined consisted in fluidextracts, prepared by the authors themselves, and in commercial preparations purchased on the open market in both Washington and Ann Arbor. In addition certain specimens were obtained directly from the manufacturers. The fluidextracts made by the authors themselves according to the U. S. P. were more active (usually from two to four times as active) as the commercial fluidextracts. Such results suggest that a reliable pharmacist following the official method may be able to supply the physician with as good preparations as the large manufacturing houses, or even better. The authors remark that the fact of the commercial preparations being usually inferior need not be considered a reflection on the manufacturers, as it may be merely the result of aging, but that in view of this deterioration it would be desirable for the date of manufacture to be stated on the bottles.

The case is different, however, with a number of special, proprietary preparations, for these are generally claimed to be permanent and often to be much more active than the official preparations. The most active of the special preparations examined was "cornutol," which was found to be as active as the best fluidextract; it is claimed, however, to be two and one-half times as active as the latter. If this statement be true of this preparation, the specimen examined had evidently undergone deterioration. The "concentrated purified ergot" of another firm was found to be only about three-fourths as active as a good fluidextract. A specimen of "ergotole" was found to be only one-third as strong as a good fluidextract although the manufacturers claim it to be two and one-half times as strong as the latter; much emphasis is laid by the manufacturers on its being a "permanent solution" which "does not change with age," and is "therefore always reliable." Two samples of "ergone," another proprietary preparation claimed to be "permanent," were examined. The sample obtained directly from the manufacturer was somewhat more than half as active as the authors' fluidextract; the other sample, obtained through the usual channels of trade, was almost devoid of physiologic activity. The "permanent" preparation had evidently deteriorated greatly.

Although, as was said above, the authors do not lay especial emphasis on the results obtained with the com-

1. Edmunds, C. W., and Hale, Worth: The Physiological Standardization of Ergot, Hyg. Lab. Bull. 76. This bulletin may be obtained by addressing the Surgeon-General of the P. H. and M.-H. S.

mercial preparations, being chiefly interested in the general principles involved, these are sufficient to emphasize the need of far more care and accuracy on the part of manufacturers, both as to their preparations and the claims made for them.[2]

It is doubtful whether uniform preparations of ergot and digitalis will be available until the U. S. Government adopts a system of continuous control similar to that which has proved so satisfactory in the case of antitoxins, vaccine virus, etc.; manufacturers are failing to supply satisfactory preparations of these drugs just as they failed to supply antitoxins, etc., of uniform value until the passage of the law placing them under the control of the Public Health and Marine-Hospital Service.

THE GRAND CLIMACTERIC IN MAN

That man, passing through life, is subject in certain years to special dangers is an idea now tenaciously held by many, and one which, since very early times, seems to have appealed to the minds of both medical and lay observers. The antiquity of the conception is illustrated by the etymology of the word "climacter"; it is derived from the Greek κλιμακτήρ which means literally, "a step of a stair-case or ladder," though it was used also to designate "a dangerous period of life." References to "climacterical years," or to the "grand climacteric," are to be found in the writings of older English authors, including Sir Thomas Browne in his "Vulgar Errors," Massinger in "The Old Law," and Burke in his "Reflections." Every seventh or ninth year was considered dangerous, most of all the sixty-third year of a man's life.

That some relation exists between certain of these critical periods and the sexual functions has also long been maintained. In both male and female, the fourteenth year corresponds approximately to puberty, and, in woman, the forty-second, or the forty-ninth year, is not uncommonly the date of the menopause. In man, at the age of sixty-three—his *grand climacteric*—some assume that, owing to the cessation or marked diminution of the activity of the testicles, a profound change takes place in the body and that this change corresponds closely to that supposedly dependent on the more sudden alteration in the function of the ovaries at the menopause in woman.

That certain tolerably characteristic symptoms, not unlike those presented by women at the "change of life," are undoubtedly manifest in many men at about the age of sixty-three, will be vouched for not only by physicians in general practice, but also, particularly, by nerve-specialists, to whom the patients ordinarily turn for relief. On the symptoms referred to attention has recently been focused again in the articles of Mendel[1] and of Fürst.[2] The most striking of the disturbances attributed to the *climacterium virile* are a certain lack of emotional control and a tendency to shed tears, combined with more or less outspoken signs of depression, disinclination for exertion, lack of will-power, and irritability. Other symptoms, sometimes prominent, are dizziness, a sense of pressure in the head, hot flushes, and palpitation of the heart.

In connection with these observations the questions at once arise whether these symptoms are, in reality, due to a disturbance of internal secretion of the testicles, or whether they can be the result of the arteriosclerosis which develops, almost with regularity, at about this age, and if there may not possibly be a relation between testicular function and vascular integrity in the male. In the present state of science these are queries not at all easy to answer.

Those who defend the doctrine of the sexual origin of the male climacteric point to the nervous emotional and vasomotor phenomena which follow castration, analogous to the menopause symptoms artificially called forth in women by double oophorectomy. Though they admit the plausibility of the objection that the natural male climacteric may depend on arteriosclerosis rather than on retrogression of the activity of the sexual glands, they argue that the arteries are not always sclerosed when the symptoms appear and that, when they are, the sclerosis might be looked on as evidence of the importance of the internal secretion of the testicles for the normal regulation of the circulatory apparatus and for the welfare of the general metabolism.

According to another opinion, recently expressed, the symptoms under discussion, though dependent on anomalies of internal secretion, owe their origin not to changes in the functions of the testicles alone, but, in addition, to alterations in the activities of other related glands, notably the prostate. It seems to be undeniable that some functional connection between the prostate and the testicles exists. Paul's studies[3] indicate that the enlargement of the prostate in advanced life is a retrogressive process, perhaps comparable to the chronic atrophic or inflammatory change in the female breast at the menopause. It is conceivable that further study may prove that the symptoms so often presented by men in their early sixties are due to polyglandular insufficiency.

Fascinating as these several hypotheses are, sober-minded medical men will, until evidence of validity is compelling, refrain from too ready acceptance of any one of them. Such hypotheses are, however, valuable as stimuli to more exact observation and to the extension of experimental inquiry; it is, accordingly, worth while occasionally to review the opinions put forward and the work which is being done in connection with so interesting a matter as the male climacteric.

2. The results of such studies as these are one reason why some of the widely advertised specialties of some American firms do not appear in N. N. R.

1. Mendel: Neurol. Centralbl., 1910, No. 20.

2. Fürst: Umschau, 1911, xv, 507.

3. Paul: Lancet, London, 1910.

THE ETIOLOGY OF BERIBERI

So many observations have been reported of late favoring the belief that beriberi is caused by a dietary insufficiency, that this conclusion is now apparently well established. In a recent contribution to the subject, Fraser and Stanton[1] not only have furnished additional evidence toward this view, but have carried the investigation of the dietary factor peculiarly lacking to a point previously unattained.

The employment of 300 native laborers in the construction of a road through virgin Malayan jungle offered an unusually favorable opportunity for their work. By properly examining all candidates for employment it was possible to exclude with a presumption of certainty men already suffering from the disease; and regulation of all sanitary conditions precluded the possibility that these might influence the results. The laborers so circumstanced were divided into two equal parties, and housed some distance apart. One section was then fed on polished rice as the staple article of diet, the other on rice which had been parboiled before husking. The latter grain differed from the former in the preservation of a great part of the subpericarpal layers, which are removed almost wholly by the more usual methods of polishing. Of the two parties, the men fed on polished rice began to develop cases of beriberi in three months, without the appearance of any cases in the other section. Conditions were then reversed, and after a somewhat longer period, the party previously exempt began to suffer from the disease, without any cases originating in the control party. The influence of place and the possibility of communicability were tested by the transfer of groups of sufferers, with negative results.

The polished rice thus responsible for the human disease was then tested by feeding to fowls. Eijkman[2] and others had previously shown that by feeding chickens on such grain it was possible to produce in them an affection very closely resembling human beriberi, both clinically and anatomically. Basing their experiments on this, Fraser and Stanton were able to cause a peripheral neuritis almost at will. It was found that the polished grain invariably caused the disease in a large proportion of the fowls if fed to them for a sufficient time. Substitution of parboiled rice, and the addition to the polished rice of the parts removed in polishing, served to protect the animals. Attempts to extract a soluble poison from the polished grain were unsuccessful, but on the other hand the extraction of unpolished rice with alcohol destroyed its protective power. The clue so obtained was followed up, and Fraser and Stanton succeeded in isolating to a certain point the element essential for protection. In addition to being extracted by alcohol, it was dissolved by 0.3 per cent. hydrochloric acid. An important constituent so removed is phytin—a complex organic compound with a high percentage of phosphorus pentoxid. As the amount of phosphoric acid in the grain had been found to give an index to its power to prevent neuritis, it was first thought that this might be the desired constituent; but feeding experiments contradicted this view, while the extract after removal of the phytin was still effective.

Although it has not so far been absolutely proved that the peripheral neuritis of fowls is identical with beriberi, there is no good reason for the contrary belief, so that quite probably the results of Fraser and Stanton will be found directly transferable to the human disease. While they unfortunately did not succeed in the ultimate isolation of the essential dietary factor, they have apparently carried the problem much further along, and more investigation should soon clear up its last uncertainties.

1. Studies from the Inst. for Med. Research, Federated Malay States, 1911, No. 12, p. 1.
2. Eijkman: Virchow's Arch. f. path. Anat., 1897, cxlviii, 523.

Current Comment

THE GREAT LAKES AS A WATER-SUPPLY

A movement of significance to a vast population was inaugurated at the recent meeting of the Municipal Congress in Chicago in the action looking toward the preservation of the purity of the Great Lakes as the most available water-supply for the cities and towns along their borders. The Great Lakes Basin International Pure Water Association was there formed, including in its membership city health officers, sanitary engineers and others, from both sides of the Canadian border-line. Each of the eight states and the two Canadian provinces bordering on the lakes is to have two official delegates, one appointed by the governor of each state or province, and the other by the health authorities. A temporary organization was formed and officers selected. The organization will be made permanent, and permanent officers elected on the appointment of the official delegates as provided above. It is expected that the Lake Michigan Water Commission will be merged with this organization. Canada has begun agitation for laws controlling the discharge of sewage into the Great Lakes, and the present organization will make the movement international. The Lake Michigan Water Commission was formed in 1908 to study the pollution of Lake Michigan. This commission was composed of representatives of the United States Public Health and Marine-Hospital Service, the engineering department of the War Department and the state and municipal health authorities of the states surrounding Lake Michigan. Much valuable work was done by this commission in the study of the contamination of the lakes, and reports have been made from time to time. Largely as the result of this study, it has been found necessary by the cities along the lakes deriving their water-supply from this source to extend their intakes farther and farther from the shores to avoid pollution. Even this is found not to surmount the difficulty altogether, as with the increasing volume of sewage discharged into the lakes because of the rapid increase in

population and temporary or accidental storm conditions affecting the lake currents, the pollution is found to extend farther and farther from the shore. Pollution from passing shipping has also been determined to be a source of contamination which must be taken into consideration. The present organization seeks to apply such study to conditions along the whole body of the Great Lakes and to promote such legislation as is necessary to preserve the purity of the water-supply. The question is of increasing importance to the people affected. Chicago found it necessary to build a drainage canal which has only partially, and perhaps only temporarily, overcome the difficulty for a portion of the city and is now engaged in constructing another canal to give relief to the southern section of the city in the Calumet region. Many other cities along the lakes have individually put forth efforts to overcome to some extent the pollution of their water-supply, but the question is not wholly a local one and is far from being settled. This new organization ought to aid in bringing the necessity for concerted action before all the people concerned, and will, no doubt, result in both state and national action by the two governments with the effect of preventing, in large measure, the continued pollution of this great source of urban water-supply.

SMALL-POX IN THE UNITED STATES IN 1910

The number of cases of small-pox in the United States reported to the United States Public Health and Marine-Hospital Service for the year 1910 was 30,352, with 415 deaths. Complete reports were furnished by twenty-seven states, only partial reports being received from the others on account of their having no vital statistics laws. The total number of cases occurring, therefore, was no doubt considerably more than the figures quoted. The light death-rate, however, indicates that the infection was mild, as it has been throughout the past ten or twelve years of its prevalence in the United States; and yet in some instances, for reasons not apparent, the disease assumed considerable virulence and the death-rate ran up to 50 per cent. of the cases, as in the instance of thirty-eight cases reported from a certain district in Michigan during the months of October, November and December, 1910. This merely emphasizes what is well known—that the disease may at any time assume a virulent form and in non-vaccinated communities work great havoc. Though the number of deaths (415) is small, it is too large to represent the sacrifice in one year to a wholly preventable disease. In this day of general preventive medical measures, the occurrence of over thirty thousand cases of small-pox, with the attendant deaths, is discreditable to the wisdom of the people among whom they occur. Failure to insist on the enforcement of a protective measure that has proved its effectiveness for almost a hundred years invites the reflection that even in as progressive a country as ours compulsory general vaccination may yet have to be adopted, as it has been in Germany, Japan, Cuba, Porto Rico and the Philippines. Protective vaccination against some other infectious diseases, as typhoid, cholera and plague, seems to be demonstrating its value, but has not yet reached the point of such absolute proof by repeated trial and voluminous statistics as in the case of small-pox. Failure to benefit by the application of this proved procedure probably tends to postpone the employment of other preventive or protective measures. Small-pox, the first of the infectious diseases in which successful preventive inoculations have been applied, should long ago have disappeared from the face of the earth, or at least from civilized communities.

SUDDEN DISASTER AND CONSTANT DISEASE

The nation has been shocked by another appalling disaster, this time in Pennsylvania. A dam built across a narrow gap between two hills to hold back a vast volume of water, suddenly gave way. The flood poured down the valley, carrying death and destruction with it. Reports indicate that from 40 to 50 lives were lost in a few minutes. A wave of sympathy swept over the country. Red Cross physicians and nurses hastened to the scene. Food, clothing, hospital supplies and money poured into the death-swept valley. Special trains loaded with supplies and men started for the town almost as soon as the news of the disaster was received. The State of Pennsylvania and the entire nation, if necessary, stood ready to relieve suffering and to save life, without regard to the cost in labor or money. All this is right; nor should it be otherwise. Yet how strange that our sympathies should be aroused to immediate and purposeful action by the loss of 50 lives in a sudden and unusual way, yet leave us callous and indifferent to the fate of thousands who die from preventable but familiar causes. A Johnstown flood, an Iroquois fire, a San Francisco earthquake, will convulse the world with horror, yet the death from preventable diseases of over 600,000 people in the United States each year excites little interest. The newspapers announce the Austin disaster with front page "stories" and enormous head-lines, yet the United States Census report for 1908 (the last one available) shows that in that year in Pennsylvania alone, 2,450 people died of typhoid, 1,920 of diphtheria, 8,703 of tuberculosis, and that 9,026 infants under 2 years of age died of infantile diarrhea, a total mortality of 22,099 from only four preventable diseases in only one state. So accustomed are we to these enormous losses through familiar diseases, that we accept them as a matter of course and as the inevitable lot of mankind. Yet each of these diseases is as preventable as was the Austin flood.

SANITARY CONDITIONS IN THE COUNTRY

It is well known that advances in public sanitation have been much more rapid and effective in cities than in rural districts. Surface privies, the ubiquitous fly, and the horse manure pile which is its chief breeding-place, all combine to maintain the prevalence of typhoid fever in rural districts on a practical equality with that of the cities in the same districts. Infantile diarrhea, dysentery and tuberculosis exist in the country to a degree seemingly out of proportion to the exposure to infected water and food supplies. Speaking generally, farm life perhaps deserves its reputation for health-giving qualities. In this respect it is potentially as nearly perfect as any reputed health resort. The con-

ditions rendering country life unhealthful are such as could easily be overcome, and with far less expense to the individual than in the city. Sanitary privies are easily and cheaply constructed; kitchen garbage can be protected from flies at a nominal cost, and the chief breeding-places of the fly can be rendered inaccessible without great trouble. The two factors most essential to a betterment of conditions are a campaign of education in sanitary matters among the people themselves and a more efficient organization of the local sanitary police force of the rural districts. As an example worthy of emulation, the work undertaken a few years ago by the New York State Department of Health is to be commended. Since 1907 it has carried on a system of inspecting summer resorts to determine any existing insanitary conditions which might be detrimental to the health of guests and to arrange for the amelioration of such conditions. The work of inspection each year has been confined to summer hotels and boarding-houses having accommodations for more than twenty-five persons, which are not connected with municipal water-supply and sewerage systems. During 1909, 259 out of 307 such resorts were found to maintain unhealthful conditions. The fault was generally in connection with privies and sewage disposal, though unsatisfactory water-supplies, defective plumbing and manure piles came in for a share of the censure. The matter of improving the sanitary condition of these 259 resorts was taken up with their proprietors, and as a result 156 had their places in good order during the inspection of the summer just past, leaving 103 of the original 259 still open to criticism. A list of these insanitary resorts is printed in the *Monthly Bulletin*.[1] The name of the resort, its location and its specific sanitary inadequacies are all placed in tabulated form on the first page. As this publication enjoys a large circulation among the laity, this ought to be a most efficient way of influencing the proprietors of these places to remedy the evil conditions. Practically every public library in the city of New York and throughout the state has the *Bulletin* in a conspicuous place on its reading-tables and in this way there is a "black list" of undesirable resorts at all times open for public inspection. Other states might profitably follow the example of New York. This work should also have a salutary effect in inducing non-resort rural communities to improve general sanitary conditions.

PRIZE CARTOONS

The Committee on Scientific Exhibit of the American Medical Association offered a prize of $200 for the best series of cartoons that should be exhibited at the Los Angeles session. The prize was awarded to Mr. Charles Batchelor, of Kansas City, who exhibited six cartoons. Although this was the first time such an offer had been made, the response was most gratifying; twenty-five contestants exhibited over 150 cartoons. The first of the series we published last week, and the second appears in this issue. It is the plan to print one each week hereafter until the series is completed. Arrangement has been made for the continuance for some time of other cartoons that will be of general medical interest.

1. Monthly Bulletin N. Y. State Department of Health, August, 1911

Medical News

ILLINOIS

New Hospital.—The new Sparks Hospital, Carlyle, was formally dedicated, September 21. The hospital occupies site of the Lucas residence, to which an extensive addition has been built.

Personal.—Dr. John Haig, Le Roy, was injured recently by falling down a grain chute in an elevator.——Dr. Charles B. Dirks, Kankakee, has been appointed acting superintendent of the Elgin State Hospital.——Dr. Josiah M. Cody, Tremont, has been reappointed physician of Peoria County.

Chicago

Spinelli at Chicago.—Dr. Pier Giuseppe Spinelli, professor of gynecology of the Royal University of Naples, Italy, who has been visiting the Mayo Clinic at Rochester, Minn., is visiting in Chicago, and has been entertained by his countrymen and by the local medical association.

Personal.—Dr. and Mrs. Charles Adams, Dr. Vernon C. David, Dr. and Mrs. Glenn M. Hammon, Drs. Addison E. Elliott and Elmer L. Kenyon have sailed for Europe.——Dr. and Mrs. Arthur Geiger, Dr. and Mrs. L. L. McArthur, and Dr. Stephen C. De Veny have returned from Europe.——Dr. George J. Spencer, city physician, is reported to be seriously ill with pneumonia.

New German Hospital.—Plans have been approved for a new building to be occupied by the German Hospital of Chicago. The present building will be pulled down, and a new one erected. Mrs. Conrad Seipp has given $150,000 toward the improvement of the hospital in memory of her son and husband and this has been augmented by gifts from other friends of the institution, aggregating $100,000.

INDIANA

Asks for an Assistant.—Dr. J. P. Simonds, head of the pathological laboratory of the State Board of Health, Indianapolis, has asked for an additional pathologist, to be assigned to duty October 1.

Alumni Organize.—About forty alumni of the Kentucky School of Medicine held a meeting at the Denison Hotel, Indianapolis, during the meeting of the State Association, and formed a permanent organization. Dr. James B. Duncan, of Bedford, Ind., was elected president, Dr. Thomas C. Kennedy, of Indianapolis, secretary, and Dr. Daniel C. Peters, of Greentown, treasurer.

Defense Fund for Physicians.—The creation of a defense fund for the legal protection of physicians who are made the victims for suits for alleged malpractice was the most important matter before the house of delegates of the State Medical Association. The report of the committee as adopted provides that 75 cents should be set aside from the annual dues of each member for the defense fund. This will bring in about $1,800 a year.

Personal.—Dr. William W. Kemper, Muncie, has given up the practice of medicine and has moved to his farm near Lancaster, Ohio, where he will engage in agricultural pursuits.——Dr. Victor V. Bacon, Michigan City, secretary of the local board of health, is about to leave Michigan City and settle in Spokane, on account of the health of Mrs. Bacon.——Dr. Asa W. Brown, health officer of Bluffton, has resigned.——The condition of Dr. Adoniram J. Banker, Columbus, who is seriously ill at a sanatorium in Indianapolis, is reported to be improved.

State Society Meeting.—The Indiana State Medical Association met in annual session at Indianapolis, September 27, 28, 29. More than 700 physicians registered at the meeting and a medical achievement banquet was given on the night of September 28. This banquet was notable on account of the fact, although there were several thousand present, yet hundreds were turned away for lack of room. The principal speaker was Dr. Harvey W. Wiley, who spoke on "The Public Health Our Greatest Asset." Indianapolis was chosen as the meeting place for next year, and the following officers were elected: president, Dr. William F. Howatt, Hammond, Ind.; vice-presidents, Drs. George E. Keiper, Lafayette, Bader S. Hunt, Winchester, Dr. Thomas F. Spink, Washington, and secretary, Dr. Charles N. Combs, Terre Haute (reelected); delegates to the American Medical Association, Drs. J. Rilus Eastman, Indianapolis, and Edwin Walker, Evansville; and alternates, Dr. William R. Davidson, Evansville, and Dr. George R. Osborn, Laporte. Dr. Osborne also was elected as the tenth district member of the board of councilors, this

being the only change in the board. A resolution was adopted by the house of delegates creating a new section of the association. It will be known as the eye, ear, nose and throat section, and it will hold sessions at the meeting next year.

MARYLAND

Monument for Revolutionary Surgeon.—The grave of Assistant Surgeon Richard Waters of the Maryland Line Continetal Army at Laytonsville is to be marked by a monument. The ceremony will take place October 7, and will be under the charge of the Daughters of the American Revolution.

Hospital to be Opened.—The new Havre de Grace Hospital will be formally opened, October 16. The new institution is located in the old Baker Home, which has been remodeled at the cost of $12,000, and later a $6,000 addition will be built. Among the directors are Drs. James Lee Hopkins, secretary, and Frederick W. Steiner.

Personal.—Dr. Charles L. Mattfeldt has been elected president of the Catonsville Country Club.——Dr. Harry F. Shipley, Granite, who was recently a patient at the University Hospital, Baltimore, has recovered and returned home.——Rt. Rev. Luther B. Wilson, M.D., has recovered from his recent attack of African fever and has gone to Syracuse, N. Y.

Baltimore

To and from Europe.—Drs. William M. Dabney and George H. Everhartd have sailed for Europe, and Drs. Emil Novak, Anton G. Rytina, John Ruhräh and William C. Baer have returned from abroad.

Kelly Recovered.—Dr. Howard A. Kelly left Rochester, Minn., September 21 for his camp at Indian Point, 150 miles northwest of Toronto, Ont., and he expects to return to Baltimore about the end of October.

New Department in the University.—A new department is to be inaugurated in Johns Hopkins Hospital this fall, namely that of art as applied to medicine. It will be under the charge of the associate professor Max Broedel, who has had charge of the medical illustration department of the hospital for several years. Two classes are to be provided for medical students and artists. The purpose of the department is "to bridge over the gap existing between art and medicine, and to train a new generation of artists to illustrate medical journals and books in the future, and to spare them the years of trial and disappointment of their self-taught predecessors."

Personal.—Drs. Mary Sherwood and Joseph E. Gichner have been reappointed members of the Public Bath Commission.——Dr. Christian Deetjen has recovered from the operation which he underwent at St. Agnes' Hospital in June last for *x*-ray burns. Fourteen of these spots were removed from the hands of Dr. Deetjen and replaced by fresh skin grafts from the thighs of the patient.——Dr. Willis D. Gatch has resigned from the staff of Johns Hopkins Hospital to become professor of surgery in the Indianapolis Medical College.——Dr. J. P. Pratt has been made assistant resident surgeon in Johns Hopkins Hospital, and Dr. W. E. Dandy has been appointed assistant to Dr. Harvey W. Cushing.

MICHIGAN

Personal.—Dr. Herman H. Ruonavaara, Calumet, has given up general practice in order to study through the winter.——Drs. John E. Handy, Caro, and John G. Maurer, Watrousville, sustained cuts and bruises in an automobile accident, near Watrousville, September 19.—Drs. John H. Kellogg and James T. Case, Battle Creek, have sailed for Europe.

Physicians Honor Carstens.—A complimentary banquet was given to Dr. John Henry Carstens of Detroit, by his colleagues, September 27, in honor of his service in contributions to the medical profession. Dr. Henry O. Walker, Charles G. Jennings and Eugene Smith acted as toastmasters. The toasts took up various characteristics of Dr. Carstens. Dr. Theodore A. McGraw spoke of him as a student, practitioner and surgeon. Dr. Colonel B. Burr, Flint, president of the state medical society, spoke of Dr. Carstens' service to the profession of the state of Michigan. Dr. Joseph L. Hudson, Detroit, one of the managers of the Harper Hospital, eulogized Dr. Carstens as a hospital chief and citizen. Dr. Ernest L. Shurly, Detroit, spoke of Dr. Carstens as a friend and colleague, and Walter Hume Sawyer, Hillsdale, regent of University of Michigan, has as his subject, "Specialties." Governor Osborn paid a high tribute to the entire medical profession, and closed by saying: "Here to-night you are recognizing a master among you and that proves that you are all masters in your profession."

MISSOURI

Applicants for License Must Have Clear Record.—The State Board of Health has instituted a system of checking the courses in medical colleges taken by applicants for license to practice. Whenever it appears that any one of the courses has been taken in a college not on the accredited list the applicant will be denied the right to take the examination.

Dr. Wheeler Sustained.—The Hospital and Health Board of Kansas City has exonerated the health commissioner, Dr. Walter S. Wheeler of all charges brought against him by the milk producers' association. The board praised the work of Dr. Wheeler; it declared there had been no favoritism in dealing with dairymen, and that the milk-supply of the city was much better than it was before the campaign which Dr. Wheeler started. The investigation was ordered by the mayor on complaints brought by the milk producers' association.

St. Louis

Local Schools Disqualified.—The daily papers of October 1 and 2 announce that Barnes University and the College of Physicians and Surgeons, which are preparing to consolidate, were stricken off the list of approved schools by the State Board of Health, September 30, on account of numerous deficiencies. Inadequacies in methods of teaching were disclosed, and the laboratories of both are said to have been found defective, and the records so incompletely kept as to give no positive evidence as to the completeness of the course their students have been receiving.

Wiley Addresses City Club.—Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, was entertained at luncheon by the City Club, September 27. About 400 members attended and listened with rare appreciation to the address Dr. Wiley delivered on "Public Health the Nation's Greatest Asset." He declared that the most precious thing in St. Louis was its citizenship. He said the average human adult costs his parents and the state $12,000 and the annual loss through deaths from preventable diseases would far out-total the capital of all the banks and public utilities in the city. He made a strong plea for the conservation of the health of the people.

NEBRASKA

Asylum Changes.—The governor of Nebraska announced September 28 that he would retain Dr. Benjamin F. Williams as successor to the late Dr. John T. Hay, superintendent of the Nebraska Hospital for the Insane, Lincoln, until Jan. 1, 1912, and that he will then appoint Dr. Gustav W. Dishong, superintendent of the institution.

NEW YORK

Personal.—Dr. Arthur E. Soper of Northport has been appointed junior physician at the Manhattan State Hospital.——Dr. Fred M. Meader, Syracuse, has succeeded Dr. Willis W. Waite, as bacteriologist of Syracuse.

New Pavilions for Tuberculosis Patients.—Two new pavilions were opened on September 26 at the State Hospital for Incipient Tuberculosis at Raybrook, on which occasion bronze tablets were unveiled in each pavilion. That in one of the pavilions commemorates the work of Dr. John H. Pryor of Buffalo and that in the other that of the late Dr. Willis G. MacDonald of Albany. The cost of these pavilions was about $200,000 and doubles the capacity of the institution, making it possible to care for 600 patients annually. A new home for the help to cost $65,000 is also being erected on the grounds.

New York City

Personal.—Dr. Thomas E. Satterthwaite has returned from Europe.——Dr. Walter Lester Carr has been elected president of the American Pediatric Society, and not Dr. Augustus Caille, as erroneously stated in THE JOURNAL of July 1.——Drs. Delmer H. Durgin, Richard G. Eaton and Joseph H. Shufelter have been appointed junior physicians of the King's Park State Hospital.

Harvey Society Lectures.—The Harvey Society announces that during October the following lectures will be given at the Acadmey of Medicine at 8:30 p. m.: October 7—"Local Specific Therapy of Infections," by Dr. Simon Flexner of New York; October 14—"Chemical Structure of the Cell," by Prof. Albrecht Kossel, Heidelberg; October 28—"Anesthesia," by Prof. Max Verworn, Bonn, Germany.

Diseases in Books.—Dr. Samuel D. Hubbard of the Board of Health in speaking before the New York Library Association warned against the dangers of spreading disease through the circulating library. He thought that every library should have a corps of inspectors whose duty should be subject to

a rigid examination of all books returned. All those which bore suspicious-looking marks should be destroyed and all books should be disinfected at frequent intervals.

To Study Tropical Diseases.—The New York Post-Graduate Medical School and Hospital is preparing to send out an expedition next spring for the purpose of studying tropical diseases. A special fund of $15,000 for this purpose has been donated by Col. Robert M. Thompson of this city and John H. McFadden of Philadelphia. Capt. Joseph F. Siler, M.C., U. S. A., lecturer on tropical diseases, will have charge of the expedition and is actively engaged in the preliminary work.

The Common Drinking Cup Prohibited.—The new provision of the Sanitary Code of the Board of Health reads: The use of a common drinking cup or receptacle for the drinking of water in any public place or in any public institution, hotel, theater, factory, public hall, or public school, or in any railroad station or ferry house in the city of New York, or the furnishing of such common drinking cup or receptacle for use in such place is hereby prohibited. . . . The same to take effect on and after the first day of October, 1911.

Low Infant Mortality.—The department of health announces that for the week ended September 23, there were 324 deaths from all causes of infants under 1 year of age in Greater New York as compared with 343 for the same period in 1910. From January 1 to September 23 there have been 11,442 deaths of infants under 1 year of age, as compared with 12,603 for the same period of 1910. This is a reduction in the number of deaths of 1,161, so that the agencies which started out early in the year to save 1,000 infants may be considered as having succeeded in their effort.

Will Continue Pure Food Fight.—The Pure Food and Drug Department of the National Civic Federation, of which Seth Low is president, held two meetings in the rooms of the New York Board of Trade on October 2. At this time the following questions were up for consideration: "What is the Actual Situation in This Country with Reference to the Enforcement of the Federal and State Pure Food and Drug Laws?" and "What Legislation and What Changes in Administration will More Effectually Safeguard the People Against Alleged Food and Drug Adulterators, Misbranders and Short-Weighers?" Dr. Thomas Darlington, New York City, Dr. Harvey W. Wiley, Washington, D. C., and Dr. William C. Woodward, Washington, D. C., were speakers on this occasion.

OHIO

Health Boards to Convene.—The thirty-first conference of the Ohio State Board of Health with representatives of local health boards will be held at the Sinton Hotel, Cincinnati, October 19 and 20.

Personal.—Dr. Samuel S. Thorn, for more than fifty years a surgeon of Toledo, was the guest of honor at a banquet, September 22, tendered by the Toledo Academy of Medicine, on the occasion of his eightieth birthday anniversary.——Dr. W. W. Peter, Toledo, sails this month for China as a medical missionary of the Evangelical church.——Dr. and Mrs. Dudley P. Allen, Cleveland, have reached San Francisco on their return from the Orient.

Antituberculosis Society Election.—At the annual meeting of the Ohio Society for the Prevention of Tuberculosis, held in Columbus, September 9, the following officers were elected: Dr. John H. Lowman, Cleveland, president; Drs. Walter W. Brand, Toledo, and Frank Warner, Columbus, vice-presidents; Dr. Henry Baldwin, Springfield, secretary; and Foster Copeland, Columbus, treasurer. The following physicians were elected members of the board of directors: Drs. Robert H. Bishop, Cleveland; Charles O. Probst, Columbus; Edward V. Hug, Lorain, and Harry E. Welch, Youngstown; John S. Beck, Dayton; Clayton B. Conwell, Cincinnati; Ralph P. Daniells, Toledo; Horace Bonner, Dayton; Otto P. Geier, Cincinnati; Esther M. Tyrrell, Canton, and James B. Poling, Lima.

PENNSYLVANIA

Personal.—Dr. A. Chester Wolfe, Ridley Park, sustained a fracture of two ribs, and severe lacerations and contusions in an automobile accident, September 23.——Dr. Daniel P. Maddox, chief of the surgical staff at the Crozier Hospital, Chester, who suffered from a fracture of the skull, while alighting from an automobile, September 26, is reported to be doing well.

State Society Meeting.—The sixty-first annual session of the Medical Society of the State of Pennsylvania was held in Harrisburg, September 25-28. At the meeting of the House of Delegates, September 27, the following officers were elected: president, Dr. James Tyson, Philadelphia; vice-presidents, Drs. Hugh Hamilton, Harrisburg; Walter F. Lathrop, Hazelton; George W. Kehl, Reading, and Howard C. Frontz, Huntingdon; secretary, Dr. Cyrus L. Stevens, Athens (reelected); treasurer, Dr. George W. Wagoner, Johnstown; delegates to the American Medical Association, Drs. George W. Guthrie, Wilkes-Barre; Theodore B. Appel, Lancaster, and John B. Lowman, Johnstown; alternates, Drs. Wilmer Krusen, Philadelphia; George D. Nutt, Williamsport; George R. S. Corson, Pottsville; Americus R. Allen, Carlisle, and Henry D. Jump, Philadelphia; A. Wayne Baugh, Paoli; George G. Harman, Huntingdon; John C. Gilland, Greencastle; Lowell M. Gates, Scranton, and Philip Y. Eisenberg, Norristown. On September 28, the following trustees were elected: Drs. William T. Staples, West Chester; Frederick L. Van Sickle, Olyphant, and Dr. Alem P. Hull, Montgomery. At the meeting of the house of delegates on September 28, the following resolution endorsing Dr. Harvey W. Wiley was passed: "Resolved, That the Medical Society of the State of Pennsylvania commends the work of Dr. Harvey W. Wiley as chief of the Bureau of Chemistry of the Department of Agriculture for his earnest efforts to enforce the pure food and dairy laws of the United States." Scranton was selected as the place of meeting for 1912.

Philadelphia

Personal.—The following physicians have returned from Europe: Drs. James M. Anders, Henry K. Gaskill, J. Nicholas Mitchell and G. Oram Ring.——C. P. Decker sailed for Europe on September 30.

Medical Club Reception.—The first reception of the Medical Club of Philadelphia for the year was given at the Bellevue-Stratford Hotel, October 6, in honor of the recently elected professors of the University of Pennsylvania: Drs. Gwilym G. Davis, John B. Deaver, M. Howard Fussell, Milton B. Hartzell, Edward Martin, A. M. Pearce, A. H. Richards, Alfred Stengel and Alonzo E. Taylor.

Baby Hospitals Close.—The Chestnut Street Pier Hospital and "The Babies Hospital" in the park closed October 1. According to the report of the department of health, 10,000 babies and 6,000 mothers received attention of the physicians and nurses at the Chestnut Street Pier up to September 15. Babies received treatment and food, and the mothers were taught the care of infants and how to "modify" milk. The cost of this work was less than 7 cents a day per head.

WISCONSIN

Free Antityphoid Vaccine.—Dr. Mazyck P. Ravenel, head of the department of bacteriology in the State University of Madison, and director of the state laboratory, announces that beginning December 1, antityphoid vaccine will be supplied to physicians of the state free of charge.

Health Bulletins Planned.—The committee on hygiene of the University of Wisconsin plans to issue twelve bulletins during the academic year, for the benefit of the students, dealing with such subjects as the care of the feet, rest and exercise, the use of "patent medicines," and the care of the throat, mouth and teeth, etc.

Sanatorium Plans Approved.—The plans for the new Fond du Lac County Tuberculosis Sanatorium, as submitted by the board of control, were approved at a joint conference of the special county board committee, with Dr. Frisbie of the State Board of Control, and Miss Edyth L. M. Tate of the Wisconsin Antituberculosis Society.

State Convention to Meet.—At the annual meeting of the Wisconsin Antituberculosis Association to be held in Milwaukee, October 13, reports from twenty Wisconsin cities on the antituberculosis work in their respective districts will be grouped under the head of "A Bird's-Eye View of the Crusade." The chief speaker will be Dr. Richard C. Cabot, Boston.

Advocates Convalescent Farm.—The State Tuberculosis Commission is considering the purchase of a plot of ground 40 acres in extent, near Milwaukee, for market gardening. The raising of poultry and garden truck is considered by many members as the most feasible solution of the problem of securing work for patients who have suffered from tuberculosis, and have been discharged as apparently cured.

Personal.—Dr. Fernando C. Mock, Milwaukee, has been elected chancellor and Dr. John A. Winters, La Crosse, national sentry of the Yeomen of America.——Dr. John V. R. Lyman, Eau Claire, broke two ribs and sustained other serious injuries in a collision between his automobile and a street car, September 24.——Dr. Robert A. Kitto, Racine, who was seriously injured in an automobile accident, is reported to be convalescent.——Dr. Aart Van Westrienen, Kenosha, caught his left hand in the gearing of his automobile, September 23,

and fractured and lacerated the fingers of the hand.——Dr. Warner B. Strong, Health Commissioner of Waukesha, has resigned and will remove to St. Martins.——Dr. David W. Ashum, Eau Claire, who is ill at the Sacred Heart Hospital, is reported to be convalescing.

GENERAL NEWS

Leper Deported.—Acieto Paleby, a Philippino leper, who has been held in isolation in Washington for six months, was deported on the transport *Dixon* which sailed from Seattle for Manila, September 15.

District Association Meeting.—The fall meeting of the Iowa and Illinois Central District Medical Association will be held in the Harms Hotel, Rock Island, Ill., October 12, under the presidency of Dr. Herbert M. Decker, Davenport.

Army Medical School Opens.—The Army Medical School, Washington, opened for its regular term, October 2. Fifty-eight candidates for appointment for the medical corps, who have successfully passed the examination, reported for duty.

Health Experts' Conference.—The annual conference of the New York State Department of Health will be held in New York City, October 25. Health departments of adjoining states will be represented by delegates. E. J. Lederer, Health Commissioner of New York City, will speak on the "Activity of the Health Department."

Health Lectures in Canal Zone.—A series of health lectures is being given in Colon, under the auspices of the Cristobal Women's Club, and the success of the series has been so marked that it is probable that similar lectures will be given in the other American villages in the zone. The first lecture was on tuberculosis and was illustrated; the second was on the typhoid germ and the danger of the house fly.

National Conservation Congress.—At the third meeting of the National Conservation Congress held at Kansas City, September 26, the congress adopted resolutions approving the work of the United States Government in improving sanitary conditions and in lowering the death-rates of Cuba, the Philippine Islands and the Canal Zone; expressing satisfaction that in 1911 the national government, through its wise provisions for the maneuver division of the United States Army operating in Western Texas, demonstrated that the achievements in health and life security found possible in Cuba, the Philippine Islands and the Canal Zone, are possible with Americans on American soil; calling on our national, state and municipal governments to accomplish the same results for the people of the United States; calling attention to the fact that the national government, in the Canal Zone of Panama, has demonstrated that Caucasians, properly directed, can work in the tropics and semi-tropics without loss of efficiency; expressing the opinion that this is one of the monumental discoveries of the age; endorsing the efforts of the hookworm commission and all other efforts, governmental and extra-governmental, for increasing human efficiency through promotion of physical welfare, and calling on our governments—national, state and municipal—to increase their activities along these lines; favoring a child welfare bureau as a part of the health department of the national government, and each state and municipal government endorsing the plan of bringing together, under one direction, the various human health activities of the United States Government as a coordinated branch of its administrative work, divorced from the impediment of being a part of other administrative work of an entirely different character and conducted for entirely different purposes—this in order that the efficiency of the service may be increased to a point in some degree commensurate with its importance; protesting against the present rank neglect of health and life security, and of work for physical efficiency by the national, state and municipal governments, asking that they be given that study and care that has proved so broad an economy in the case of live stock and farm crops, and reaffirming its belief in the health conservation principles and methods endorsed by the Second National Conservation Congress. Other resolutions were also adopted, one on the pollution of streams, by sewage and trade wastes, which called on all governments to pass legislation to prevent the pollution of all waters and coast waters, and to formulate regulations regarding the pollution of streams, conforming to the requirements of the law already in force in Pennsylvania; and also one amplifying that of the American Medical Association, advocating that public health be taught in all schools and enumerated ten conditions against which there should be legislative and administrative action. These included blindness of infants, birth accidents, infant mortality, communicable diseases of childhood, work by immature children, occupational diseases and occupational accidents, especially transportation and mining. The congress emphatically showed its approval of the national department of health, by tabling by an almost unanimous vote a motion to strike out an endorsement of such a department. The speeches best received were those on medical subjects and that of Dr. Harvey W. Wiley received more applause than any other address presented. The address by Judge Ben Lindsay of Denver on "The Care of the City and Country Child," also received much attention. He considered chiefly the physical side, the diseases of childhood and infant mortality and the neglect of the health side of the child. The suggestion for a national child's bureau was formulated. It must be understood that this congress was chiefly devoted to soil conservation and soil fertility and most of the delegates were connected with farming, mining, forestry and water interests, and that these problems consequently were chiefly in evidence.

International Pure Water Association.—The Great Lakes Basin International Pure Water Association was organized in Chicago, September 29, and the following officers were elected: President, Dr. Clyde E. Ford, health officer of Cleveland, O.; vice-president, Dr. Chas. J. C. O. Hastings, health officer of Toronto, Ont.; secretary, Prof. Edward Bartow, Urbana, Ill.; editor, Dr. William A. Evans, Chicago; and member of the executive committee, Dr. Francis E. Fronczak, Buffalo, N. Y. The reason for the formation of the association is the growing pollution of the water of the Great Lakes.

Railway Surgeons to Meet.—The American Association of Railway Surgeons will hold its annual meeting at Hotel La Salle, Chicago, October 18-20, under the presidency of Dr. A. R. Mitchell, Lincoln Neb.——The twenty-first annual session of the New York and New England Association of Railway Surgeons will be held at the Hotel Astor, New York City, November 16, under the presidency of Dr. Frederick A. Goodwin, Binghamton, N. Y.——The tenth annual meeting of the Association of Seaboard Air Line Railway Surgeons will be held in the New Willard Hotel, Washington, October 17-18, under the presidency of Dr. Jarvis G. Dean, Dawson, Ga.

Railway Surgeons in Session.—The fourth annual meeting of the Railway Surgeons' Association of the Pennsylvania Railroad Lines East of Pittsburgh, was held at Atlantic City, N. J., September 22-23, under the presidency of Dr. Spencer M. Free, Du Bois, Pa. The following officers were elected: president, Dr. Laban T. Bremerman, Dowington, Pa.; vice-presidents, Drs. Edward B. Heckel, Pittsburgh, Pa., and Dr. E. E. Harrison, Baltimore, Md.; secretary, Dr. Amos W. Colcord, Clairton, Pa. (reelected), and treasurer, Dr. Eugene H. James, Harrisburg, Pa. (reelected). It was decided to hold the next meeting in Atlantic City, just prior to the meeting of the American Medical Association.

Academy Meeting.—The sixteenth annual session of the American Academy of Ophthalmology and Oto-Laryngology opened in the convention hall of the Claypool Hotel, Indianapolis, September 25, with Dr. John J. Kyle, of Indianapolis, as president. The annual address was given by Dr. Albert Gray, of Glasgow, his subject being "The Problem of Otosclerosis and Allied Conditions." In recognition of his contributions to otological science he was elected an honorary member of the Academy and awarded a gold medal. On Monday evening occurred the annual dinner. The following officers were elected: president, Dr. George F. Suker, Chicago; secretary, Dr. Lee M. Francis, Buffalo; treasurer, Dr. Secord H. Large, Cleveland; vice-presidents, Drs. John W. Murphy, Cincinnati, Edward C. Ellett, Memphis, Tenn., and Thomas E. Carmody, Denver, and councilors, Drs. Emil Mayer, New York, James M. Ray, Louisville. Resolutions advocating separate rooms in public schools for children with defective vision and inspection of all public school children with the aim of conserving their sight and hearing were adopted. The next meeting will be at Atlantic City or Chattanooga.

FOREIGN NEWS

Retirement of Kernig.—The chief of the Obuchow hospital for women at St. Petersburg, Dr. W. Kernig, has retired after forty-seven years of service. The city authorities have appointed him for life as consulting physician to the hospitals and on the board of hospital medical directors. Kernig's name is best known by his sign of meningitis.

Cholera in Europe.—According to *Public Health Reports*, September 22, there were sixty-three cases of cholera in Naples the week ending September 2, 220 cases in Leghorn, and 1,377 cases throughout Italy with 613 deaths. The total for Italy June 8 to September 15 has been 10,397 cases and 4,123 deaths. The cable has reported rioting and "rescue" from the doctors of cholera patients from the hospitals in

two towns in the extreme south of Italy. The hospital at Massafra was set on fire by the mob and two cholera patients were burned and one of the doctors was seriously wounded. It is significant that none of our Italian medical exchanges mentions even the presence of cholera in Italy this year. They chronicle the appearance of cholera at various points in Turkey and other countries, but when it comes to Italy—"Nice weather we are having." This reticence to date has been so universal and complete that it suggests compulsion. The only reference to the cholera that we have noticed in any of our Italian exchanges is a quotation from a daily paper relating an interview with Professor Sclavo in regard to the campaign against cholera last year of which he had charge. He said "Bacteriologic skill is not needed so much in fighting an epidemic as good practical common sense. In our campaign we were constantly at work, in the schools, factories, prisons and in families, lecturing, talking and distributing circulars giving simple plain directions for hygiene, a hygienic ten commandments. Our force was constantly on the go, talking and interrogating everyone, on the streets, in the market places, in street cars, etc., asking questions and inculcating the principles of hygiene in old and young, adults and children. Local hygiene propaganda committees were organized everywhere which did most valuable service, and prizes of $1 or $2 were given for the best cleaned up houses and families."

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Sept. 15, 1911.

Contraband Trade in Saccharin

Following the recent drought there has been a shortage in the beet-sugar crop in Germany and Austria as well as in France, and it is now likely that saccharin will again make its appearance on the market. Its manufacture and use are not, however, permitted in France, except for pharmaceutic purposes, and then only under strict oversight by the customs officials. Unfortunately, however, it has always been difficult to prevent smuggling across the Belgian frontier from Holland and across the eastern frontier from Switzerland. Still, thanks to the supervision exercised, smuggling is comparatively slight in France, especially compared to that practiced in Russia, where the use of saccharin is likewise forbidden. In view of the existing difficulty—her boundaries being entirely of land—in the struggle against smuggling, Russia has taken the initiative in forming an international conference to take measures against this smuggling which is so disastrous both from the point of view of public health and of money interests. This conference was held at Paris. Germany, Austria, Belgium, Denmark, Greece, Holland, Hungary, Italy, Portugal, Russia, Sweden and Switzerland were represented. The propositions suggested by France were unanimously accepted. It was not a question of keeping watch over smuggling, but simply of the right of control over the firms which manufacture saccharin (Switzerland has six, Germany two and Austria one), of supervising the manufacture and of seeing that the product crosses the frontiers only under properly guaranteed conditions. Representatives from the different powers which took part in the conference will meet in Paris about October 1 to sign the decisions agreed on, and thus it is hoped that smuggling of saccharin will be definitely done away with.

The Prevalence of Heat and Odors at Paris

In spite of the advanced season, the heat continues in Paris, the temperature in the afternoon being as much as 34 C. (93 F.), and at the middle of the day about 10 degrees higher than the normal. In addition to the normal inconveniences of extremely hot weather, there are also those of scarcity of water on the one hand, and on the other the bad odors which permeate the city. On several occasions the water department has been obliged to shut off the supply of water from midnight until 6 o'clock in the morning. As to the odors, they are most noticeable around the manufactories in the suburbs. It is true that for fifteen years the prefect of police has not authorized the opening of a single ill-smelling factory, but unfortunately those already existing continue to operate, and their inconveniences are particularly felt at this season.

Death of Professor Girod

The death of Dr. Paul Girod, professor of natural history at the Ecole de médecine de Clermont, is announced.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 15, 1911.

Personal

After Professor Sauerbruch, now at Zurich, had declined the call to be director of the surgical clinic at Königsberg, the invitation was extended to Professor Friedrich of Marburg. It is doubtful if he will accept.

September 13, Professor Leopold, director of the royal gynecologic clinic at Dresden, died at his summer home. He had reached the age of 65. Leopold belonged among the most prominent gynecologists. He was a pupil of the well-known Leipsic gynecologist, Credé. In 1874, Leopold joined the Leipsic faculty and in 1883 he succeeded Professor Winckel as director of the Dresden gynecologic clinic after Winckel had accepted the position of director of the university gynecologic clinic at Munich. Leopold has published a large number of scientific works. We may mention his studies of the uterine mucosa, of the scoliotic pelvis, of Cesarean section in artificial premature labor, and of the structure of the placenta. The latest edition of the Saxony official manual for midwives was prepared by him. Since 1894 he has belonged to the editorial staff of the *Archiv für Gynäkologie*. He married a daughter of Credé.

International Congress for Laryngology

In the latter part of August and the early part of September, the third international congress of laryngology held its sessions here. About 400 members assembled from all countries and the scientific proceedings were very active. To be sure no great subjects were debated and, so far as known, no new inventions were presented. It is worth noticing that the congress appointed a special committee to introduce a collective investigation of ozena and report to the next congress which will meet in Copenhagen in 1915. As is the custom, there were a number of banquets which were chiefly instituted by the laryngologic society of this place. It should not go unmentioned that the badge of the congress contained as an important feature the reflector of a laryngeal mirror. This innovation opens a fruitful perspective for future congresses; we may expect at the next gynecologic congress that the badge will represent a pair of forceps or some other characteristic object.

Infant Mortality this Year During the Great Heat

The extraordinarily high temperature of the past summer, as was to be expected, resulted in a great increase in infant mortality. This is shown by a compilation recently published by the director of the bureau of statistics of our neighboring city Schöneberg. In the first two weeks of July there were 1,031 and 1,200 deaths of infants and even the week from July 16 to 22, which in many places produced unbearably hot days, required only 1,368 victims, which is less than the average of August of last year. But in the week from July 23 to 29 the number increased to 2,539 and then rose to 2,866, reaching in the week of August 6 to 12 its highest point, 3,381. The heat abated the following week, but this was unable to diminish the toll of deaths to any considerable extent, for still 3,307 children succumbed; it was not until the week of August 20 to 26 that the number of deaths fell to 2,856.

For all the larger German cities, the mortality for the two weeks from August 6 to 19 was three times as high as from July 2 to 15. In some of the large cities, particularly in the Rhine provinces, the difference was even greater. In Aix la Chapelle, Krefeld, Mülheim and Plauen from August 6 to 19 from five to seven times as many children died as from July 2 to 15, and in Düsseldorf and Hamborn from five to six times as many. In Hamborn and Chemnitz the infant mortality in the week from July 13 to 19 reached a height equivalent to an annual mortality of more than 100 per cent. The same was true of Leipsic in the week of August 6 to 13 and of Erfurt for the week of July 23 to 29. In the five weeks period from July 23 to August 26 the mortality was highest in Leipsic, being 88.5 per cent., Duisburg 81.8 per cent., Hamborn 80.7, Chemnitz 78.0, Erfurt 74.3, Aix la Chapelle 74.0, Cologne 73.2, and in Halle 71.3 per cent. In all these cities the babies were literally decimated in the short space of five weeks. The average mortality for the forty-eight larger cities was 45.2 per cent., more than double that in July and August of last year. In many large cities the increase was considerably greater. A smaller rate was found only in Kiel and Königsberg. If the mortality in the large cities of Germany had been the same as in the previous year, as many as 9,000 children would have lived who fell victims to the murderous heat.

Medical Care for the Members of Soldiers' Families

Since 1909 the management of the army has provided medical care for those belonging to the families of soldiers. Hospital treatment was given when deemed necessary by the army surgeon and the cost of board and nursing was charged to the empire. Furthermore specially educated medical officers are sent from other garrisons for special cases, operations, etc. While in the beginning these treatments were given only for life-saving operations it is now extended to a variety of cases in which hospital care is desirable. Provisions are also made for transporting the sick members of soldiers' families to sanatoria. The entire cost of the increased hospital treatment is estimated at $50,000 (200,000 marks) yearly, for which heretofore only 20,000 marks were appropriated.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Sept. 23, 1911.

Care of Tuberculous Patients in Vienna

It was only a few years ago that our authorities and organizations grappled with the problem of controlling tuberculosis; nevertheless, the results obtained so far are very promising. First of all, two public sanatoriums have been erected, but, although equipped in up-to-date manner, they are generally admitted to be sadly insufficient, a large number of such institutions being needed. The Krankenkassen have instituted a special tuberculosis service for their members, and the relative importance of this service may be judged from the fact that of a population of 2,000,000, the three principal Krankenkassen alone count fully 400,000 (20 per cent.) as their members, and altogether about 50 per cent. of the wage-earning population is under the influence of the Kassen and thus may profit by the system, which may be described as follows: The physician is required to report each case of tuberculosis, or what he thinks may be an incipient case, to a central board, which causes the patient to be examined by a specialist. If found to be tuberculous and capable of treatment the patient is submitted to a course of tuberculin injections by a competent tuberculosis specialist, or, as the case may be, is sent to a convalescent home or a private sanatorium. In the meantime, his conditions of living are investigated, note is made of his environment, etc., so that the course of the disease may be controlled. Valuable information is thus gathered as to the ultimate fate of such patients. Thus in the "Gremial" Krankenkasse, which has a membership of 33,000, about 600 cases are on the control list, while the total number of tuberculous members is estimated at 1,500. Another large body is the Krankenkasse of the trade-unions, which has a membership of 300,000, and to which in 1909, about 15,000 notifications of illness and 600,000 days lost on account of tuberculosis were reported. This organization contributes fully one-third of all fatal cases in Vienna among persons over 15 years of age. Some 7,000 patients who were on the sick list for other reasons proved to be tuberculous, and 22,000 members of this organization may be estimated as tuberculous. One feature of the gigantic mechanism required is the appointment of specialists to treat with tuberculin all patients who are still able to work. This is as yet a huge experiment, having been in force only since January, 1911, though some of the organizations have already reported very favorably on the procedure. A centralized control has also been adopted here.

BUDAPEST LETTER

(From an Occasional Correspondent)

BUDAPEST, Sept. 6, 1911.

Pellagra in Hungary

A recent report of the public health service of Transylvania (the southeastern part of Hungary), announces the appearance of pellagra which is spreading rapidly. As generally held here, the disease is due to eating damaged maize, and the prevalence of it is not surprising in view of the fact that maize is the staple food of the peasantry in this part of Hungary. The maize is rendered unwholesome by the modern intensive method of cultivation, the grain being harvested while still unripe, with the result that putrefaction occurs. In parts of Italy, especially in Lombardy and Piedmont, and also in Roumania, pellagra is even more common than in Hungary. The government of Hungary has distributed wheat flour among the indigent inhabitants of southern Hungary. The disease itself is by no means severe, though some patients suffer from mental disturbance which does not yield readily to treatment. Many of the sick with pellagra recover when supplied with wholesome food.

The Relation of Alcoholism to Crime

At a meeting of the Society of Medical Practitioners held on September 2, Dr. Gerö, medical expert attached to the law courts, reported that he has had to examine ninety-four individuals charged with homicide or attempted homicide. In this number there were six malingerers and four persons who were wrongly supposed to be the subject of mental defects. Of the remaining eighty-four criminals seventy were males and only fourteen were females. With regard to their condition of health, the following conditions were noted: one case of pregnancy with mental derangement, one case of morphinomania, one case of hysteria, nine cases of delusions of persecution, seven cases of various states of mental disorder, eight cases of hysteria or epilepsy, thirteen cases of various diseases either supposed or known to have an effect on the brain, ten cases of mental defect, and thirty-four cases of alcoholism.

Dr. Gerö emphasized the fact that the cases of alcoholism thus formed more than one-third of the total number of persons charged with homicide. He added that the influence of alcohol as a contributory cause of homicide would be seen to be even greater if, instead of a mere enumeration of accused individuals personally addicted to alcohol, an examination were made of the antecedents under other headings. This would show that many epileptics and mental defectives were the children of alcoholic parents. Gerö went on to say that acts of extreme violence might be committed not only by habitual inebriates but also by persons in a state of occasional alcohol intoxication, in illustration of which he quoted two cases.

Marriages

HERBERT LENTZ FREELAND, M.R.C., U. S. Army, to Miss Emma E. Pritchard of Los Angeles, Cal., at Manila, P. I., August 14.

GEORGE PLUMMER HOWE, M.D., Lawrence, Mass., to Miss Marion Dudley Endicott of Boston, Mass., September 20.

GEORGE B. SCHOLL, M.D., Baltimore, to Miss Ethel Waterbury Jones, at Drexel Hill, Philadelphia, September 20.

WILFRID ADELARD PLOURDE, M.D., Overly, N. Dak., to Miss Blance Desilets of Grandes Piles, Canada, September 4.

BERT CHAMBERLAIN KERN, M.D., Mogollon, N. Mex., to Miss Eva Jackson of Colorado Springs, Colo., September 27.

EDWIN LUTHER STEVENS, M.D., Des Moines, Ia., to Miss Mabel Quam Hilbish of Sheridan, Ill., September 21.

FRANCIS R. BLANCHARD, M.D., Lakeview, Mich., to Miss Lottie Castle of Richland, Mich., September 20.

WALTER BAYARD HUEY, M.D., El Campo, Tex., to Miss Caroline Jerusha Burry of Chicago, September 27.

CHARLES G. MIXTER, M.D., Boston, to Miss Helen Worthington McIntosh of Milwaukee, October 5.

MARTIN RUSS EDWARDS, M.D., Shanghai, China, to Miss Ethel Hooper of Chicago, September 27.

SNYDER R. MILLER, M.D., Windsor Hills, Baltimore, to Miss Nell Miller of Pittsburgh, September 7.

EDWIN JANAS, M.D., Los Angeles, Cal., to Miss Florence Cluff of San Francisco, September 12.

CARL RICHARD BASSLER, M.D., Elkhart, Ind., to Miss Edna Hollinger of Pittsburgh, September 6.

HARRY LORENZO JAMES, M.D., Springfield, Ill., to Miss Mildred Falk of Chicago, January 14.

ARTHUR H. R. KRUEGER, M.D., to Miss Grace Wolter, both of Carpentersville, Ill., September 27.

HAROLD A. HUME, M.D., Owosso, Mich., to Miss Nina Beebe of Ovid, Mich., September 20.

ALBERT BREWER LANDRUM, M.D., to Miss Flora Esther Rohe, both of Columbus, O., June 12.

C. BEN WILEY, M.D., to Miss Lucille Johnson, both of Winkelman, Ariz., September 14.

BERT P. COLE, M.D., to Miss Rose M. Persinger, both of Kenney, Ill., September 8.

WILLIAM JASON MIXTER, M.D., to Miss Dorothy Fay, both of Boston, September 21.

ANGUS MACIVER, M.D., Marysville, O., to Miss Gladys Jewell, of Peoria, September 21.

WALTER L. CLAY, M.D., to Miss Meta Henderson, both of Hannibal, Mo., recently.

AMZI S. PLUMMER, M.D., to Miss Bessie I. Pitney, both of Peoria, September 6.

Deaths

John Titus Hay, M.D., for many years superintendent of the Nebraska Hospital for the Insane, Lincoln, an alienist of distinction, and a gentle and unassuming man whose life was devoted to helping sufferers from mental disorders; died September 28, from arteriosclerosis, aged 62.

He was born at Schoharie, N. Y., Aug. 3, 1849, and secured his medical degree from the University of the City of New York in 1878. A year later he became first assistant physician at the State Insane Hospital, Lincoln, and served in that position for fourteen years. In 1893 he was appointed superintendent, but with the change of administration he was removed. He was again appointed assistant physician in the State Hospital by Governor Dietrich and again made superintendent by Governor Mickey and held this position through the administration of Governor Sheldon, being succeeded in 1909 by Dr. Woodward. Governor Aldrich, on assuming office in February, 1911, reappointed Dr. Hay superintendent of the institution.

In the interims Dr. Hay practiced medicine in Lincoln, specializing in nervous and mental diseases and acting as alienist for the Lancaster County Board of Examiners and as a member of the County Insanity Commission. He was a member of the American Medical Association and the state and county medical societies.

Henry Herbert Herbst, M.D. University of Pennsylvania, Philadelphia, 1881; a member of the American Medical Association; chairman of the medical section of the Medical Society of the State of Pennsylvania, and first vice-president of the society, and a member of the American Academy of Medicine; at one time coroner's physician; formerly mayor of Allentown, Pa., and for nine years president of the board of control; for several years a member of the board of health and school director in 1894; a pioneer in the medical inspection of public school children; died in the University of Pennsylvania Hospital, Philadelphia, September 20, from disease of the kidneys, aged 53.

James Curtis Hepburn, M.D. University of Pennsylvania, Philadelphia, 1836; for more than forty years a medical missionary in China, the Straits Settlements and Japan; who issued the first Japanese-English dictionary and assisted in the first translation of the Bible into Japanese, and for this and other work was given the insignia of the Imperial Order of the Rising Sun by the Emperor of Japan; died at his home in East Orange, N. J., September 21, from senile debility, aged 96.

Jefferson Dudley Poindexter, M.D. College of Physicians and Surgeons, Baltimore, 1886; a cadet at the United States Military Academy, West Point, N. Y., in 1883 and 1884; who entered the Medical Corps of the Army in 1887, and was made captain in 1892; was retired with the rank of major in 1901 on account of disability in line of duty, and since his retirement has been a resident of Danville, Va.; died at his home in that place, September 10, aged 45.

William Alexander Graham, M.D. University of Pennsylvania, Philadelphia, 1899; a member of the American Medical Association; medical director of Watts Hospital in Durham, N. C., in 1906; attending physician to Watts and Lincoln hospitals and city health officer; died at his home at Durham, September 19, from the effects of a gunshot wound in the head believed to have been self-inflicted with suicidal intent while despondent, aged 35.

Byron Caldwell Hendershott, M.D. Miami Medical College, Cincinnati, 1892; formerly a member of the American Medical Association; chief of staff of the Union Hospital, Canal Dover and New Philadelphia, O.; local surgeon of the Pennsylvania and Baltimore and Ohio systems; president of the local board of U. S. pension examining surgeons; died at his home in New Philadelphia, September 22, from cerebral hemorrhage, aged 43.

Samuel L. Cheaney (license, Illinois Army Board, 1862; Illinois State Board of Health, years of practice, 1880); a practitioner since 1858; assistant surgeon and later surgeon of the Twenty-Ninth Illinois Volunteer Infantry during the Civil War; for many years a leading practitioner of Harrisburg, Saline County, Ill., and state senator in 1878; died at the home of relatives at Henderson, Ky., August 27, aged 76.

William J. Stanford, M.D. University of Nashville (Tenn.), 1858; surgeon in the Confederate service throughout the Civil War; for twenty-two years a practitioner of Ben Wheeler, Tex.; died at the home of his son in Canton, June 11, aged 76.

Hiram Gettman DuBois, M.D. University of Buffalo, N. Y., 1866; a member of the American Medical Association; once president, twice vice-president and a permanent member of the Oneida County Medical Society; in 1881, 1893 and 1896 coroner of Oneida County; for many terms village trustee of Camden; died at his home, September 19, from cerebral hemorrhage, aged 74.

Reed B. Burnham, M.D., Starling Medical College, Columbus, O., 1894; a member of the American Medical Association, and National Association of U. S. Examining Surgeons; from 1895 to 1900 assistant surgeon at the Ohio State Soldiers' and Sailors' Home; died at his home in Piqua, O., recently, and was buried September 17, aged 44.

Edward Winslow Warren, M.D. Harvard Medical School, 1883; afterward district physician at the Boston dispensary; for three years a practitioner of Ansonia, Conn., and thereafter of Boston; especially interested in laryngologic and bacteriologic research; died at his home in Boston, June 28, from pneumonia, aged 55.

James H. Dickerson, M.D. Philadelphia University, 1870 (license, Illinois, years of practice, 1878); Missouri Medical College, St. Louis, 1899; a member of the American Medical Association; local surgeon of the Wabash system at Taylorville; died at his home in that city, September 15, from pneumonia, aged 64.

Edgar Lee Freiberger, M.D. Denver and Gross College of Medicine, Denver, 1906; a member of the Colorado State Medical Society; a specialist in diseases of the eye, ear, nose and throat, who recently erected the Alamosa Hospital; died in that institution, September 16, from sarcoma, aged 38.

Martin Lucius Fielder, M.D. Graffenburg Institute, Dadeville, Ala., 1859; an honorary member of the Medical Association of the State of Alabama; for several years superintendent of the Soldiers' Home, Mountain Creek; died suddenly at his home in Wetumpka, September 18, aged 76.

John J. Pickett, M.D. Curtiss Physio-Medical Institute, Marion, Ind., 1884; a member of the Nebraska State Medical Association; district surgeon of the Union Pacific system; died at his home in Broken Bow, September 13, from cerebral hemorrhage, aged 61.

John A. Vieregge, M.D. St. Paul (Minn.) Medical College; (license, Minnesota, examination, 1887) a member of the Ramsey County Medical Society; died at his home in St. Paul, September 17, from diabetes, aged 50.

J. C. M. Cunningham, M.D. Cooper Medical College, San Francisco, 1900; of San Francisco; surgeon on the steamer *San Juan;* died on that boat, July 28, from heat exhaustion, off the coast of Central America, aged 34.

William Henry Cope, M.D. Cooper Medical College, San Francisco, 1887; district surgeon for the Southern Pacific system; died at his home in Pleasanton, Cal., May 28, from chronic interstitial nephritis, aged 59.

Lawrence Sterling Alexander, M.D. University of Maryland, Baltimore, 1868; since 1880 a practitioner of St. Augustine, Fla.; died at his home in that city, Nov. 6, 1910, from heart disease, aged 68.

Samuel R. Berg, M.D. Iowa Medical College, Eclectic, Des Moines, 1889; formerly city physician of Independence, Mo., and later a resident of Holden, Mo.; died in Warrensburg, Mo., September 19.

William Lee Berry, M.D. Cooper Medical College, San Francisco, 1889; of Tonapah, Nev.; died in the Miners' Hospital in that city, September 21, from hemorrhage of the stomach, aged 46.

Albert E. Gundry, M.D. Kansas Medical College, Topeka, 1894; of Junction City, Kansas; died in Christ's Hospital, Topeka, September 14, from carcinoma of the stomach, aged 45.

Daniel Franklin Coolidge, M.D. Bellevue Hospital Medical College, 1867; a veteran of the Civil War; died at his home in Ludlow, Vt., September 17, from disease of the brain, aged 71.

William Lorenzo Goodale, M.D. University of Vermont, Burlington, 1888; of Montpelier; died at the Heaton Hospital in that city, September 17, from nephritis, aged 45.

Harriet A. Anderson, M.D. Northwestern University Woman's Medical School, Chicago, 1882; died at her home at Mount Horeb, Wis., September 17, aged 72.

Edwin J. Atkinson (license, Missouri, 1883); a practitioner since 1856; died at his home in Nevada, September 17, from cerebral hemorrhage, aged 81.

George Washington Gaddy (license, Arkansas, 1903), died at his home in Fourche, Dec. 5, 1910, from pneumonia, aged 70.

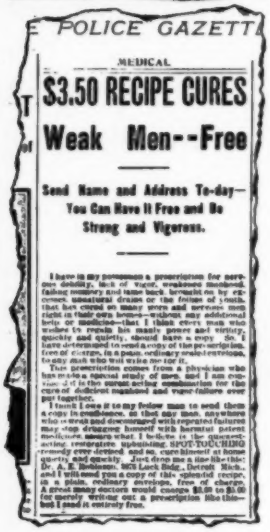
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

THE INTERSTATE REMEDY COMPANY*

A Mail-Order Medical Fake and Its "Free Recipe" Bait

Readers of the less particular newspapers and magazines are doubtless familiar with an advertisement which is headed in bold type: "$3.50 Recipe Cures Weak Men—Free" (Fig. 1). This "free prescription" will be sent, so the advertisement says, by a "Dr." or, as it has sometimes appeared, "Mr." A. E. Robinson, Luck Building, Detroit, Mich. Investigation seems to show that A. E. Robinson is the style adopted by one Andrew Robinson, who some years ago was connected with a fraudulent mail-order "men's specialist" concern in Indiana known as the



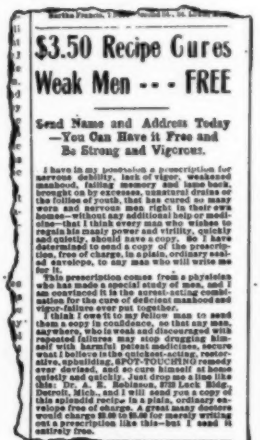


Fig. 1.—Photographic reproductions (reduced) of the stock advertisement sent out by the Interstate Remedy Company under the name of A. E. Robinson. One of these "lost manhood" advertisements appeared in the *Police Gazette*, the other in the *Baptist Record*. One would expect to find this type of advertising in a sheet like the *Police Gazette*, but in a religious weekly it seems disgustingly incongruous.

"State Medical Institute." Afterward he secured a license to practice in Illinois and in 1904 he registered, by reciprocity, in Michigan. Here he has been employed to act as the stool-pigeon for a mail-order medical concern—the Interstate Remedy Company. This company, advertising under Robinson's name, is incorporated and has the following officers and directors:

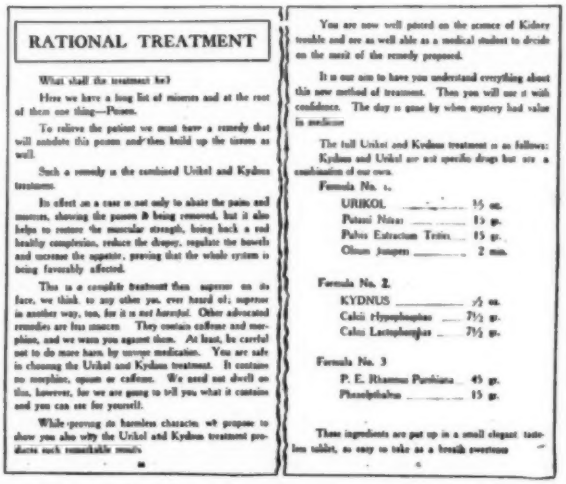
EDWARD D. HAYES, President.
WILLIAM H. BOURKE, Vice-President.
HENRY F. COON, Secretary and Treasurer.

ITS UNSAVORY PAST

The Interstate Remedy Company is a successor to the Dr. Knapp Medical Company and the Dr. Raynor Medical Company. The Knapp and Raynor medical companies of Detroit were two names for the same concern, which was put out of business in 1904 by the government "for operating through the mails a scheme or device for obtaining money or other property by means of false or fraudulent pretenses, representations or promises." Not only did the Dr. Knapp Medical Company operate a fraud, but it published such filthy newspaper advertisements that some of them were declared to violate the obscenity law.

"Dr. A. E. Robinson," then, is the Interstate Remedy Company and the Interstate Remedy Company is Messrs. Hayes, Bourke and Coon. These three men are, we understand, also the officers and stockholders of another "patent medicine" fake, the Marmola Company. Marmola is an "obesity cure" which has been advertised both by the "fake prescription" method and also direct. According to various analyses, Marmola depends for its action on the presence of thyroid extract, a powerful and, in the hands of the public, a dangerous drug.

The "$3.50 recipe," which Robinson advertises that he will send free, is said to be for "nervous debility, lack of vigor, weakened manhood, failing memory and lame back, brought on by excesses, unnatural drains or the follies of youth . . ." The close resemblance of this advertisement to the dirty sheets put out by the "men's specialist" quacks is apparent. Those who answer the advertisement and ask for the free "recipe" are sent a form-letter which is filled in, here and there, to give it the verisimilitude of a personal communication; they are also sent a booklet entitled "Rational Treatment of Kidney and Bladder Diseases."



RATIONAL TREATMENT

What shall the treatment be?

Here we have a long list of miseries and at the root of them one thing—Poison.

To relieve the patient we must have a remedy that will antidote this poison and then build up the tissues as well.

Such a remedy is the combined Urikol and Kydnus treatment.

Its effect on a case is not only to abate the pains and miseries, showing the poison is being removed, but it also helps to restore the muscular strength, bring back a real healthy complexion, reduce the dropsy, regulate the bowels and increase the appetite, proving that the whole system is being favorably affected.

This is a complete treatment then supreme on its face, we think to any other you ever heard of; supreme in another way, too, for it is not *harmful*. Other advocated remedies are less sincere. They contain caffeine and morphine, and we warn you against them. At least, be careful not to do more harm by unwise medication. You are safe in choosing the Urikol and Kydnus treatment. It contains no morphine, opium or caffeine. We need not dwell on this, however, for we are going to tell you what it contains and you can see for yourself.

While proving its harmless character we propose to show you also why the Urikol and Kydnus treatment produces such remarkable results

You are now well posted on the science of Kidney trouble and are as well able as a medical student to decide on the merit of the remedy proposed.

It is our aim to have you understand everything about this new method of treatment. Then you will use it with confidence. The day is gone by when mystery had value in medicine

The full Urikol and Kydnus treatment is as follows: Kydnus and Urikol are not specific drugs but are a combination of our own.

Formula No. 1.

URIKOL	½ oz.
Potassi Nitras	15 gr.
Pulvis Extractum Triticum	15 gr.
Oleum Juniperi	2 min.

Formula No. 2.

KYDNUS	½ oz.
Calcii Hypophosphas	7½ gr.
Calcii Lactophosphas	7½ gr.

Formula No. 3

P. E. Rhamnus Purshiana	45 gr.
Phenolphthalein	15 gr.

These ingredients are put up in a small elegant tasteless tablet, so easy to take as a breath sweetener

Fig. 2.—Photographic reproduction (reduced) of two pages of the book sent in answer to the request for the free "$3.50 recipe." The "free recipe" is shown on the right-hand page and consists of three formulas, two of which contain "patent medicines"—Urikol and Kydnus—which can be obtained only from the Interstate Remedy Company. In other words, the offer of a "free recipe" is a mere catch-penny cheat.

THE FREE PRESCRIPTION

The form-letter states that the "free prescription" asked for will be found on page 37 of this booklet. On the page mentioned there are to be found (Fig. 2) not one prescription but three, designated respectively as Formulas Nos. 1, 2 and 3.

A study of these prescriptions reveals at once to the physician, although it is not evident to the public, that Formulas 1 and 2 each contain a "joker" in the form of a "patent medicine." That is to say, "Urikol" and "Kydnus" are both secret preparations obtainable only from the Interstate Remedy Company and are not kept in stock by the druggist. This scheme of operating what has been called the "prescription fake" dodge is a comparatively recent innovation on the part of the Interstate Remedy Company. Their older method consisted in sending three bona-fide prescriptions, one of which called for a drug (muirapuama) which while not proprietary was unofficial. It is perfectly natural, however, that the men who have worked the Marmola "prescription fake" to such great finan-

* This article, like similar ones of interest to the laity, will be reprinted in pamphlet form with additional illustrations and somewhat elaborated; price 4 cents.

cial advantage should have modified the humbug so as to apply it to another branch of their medical frauds.

THE C. O. D. HUMBUG

To go back to the form-letter: No matter what excuse the prospective victim may have given for writing, he is told that his letter "indicates that you need the actual medicines at once also the best medical advice while you are using them." To meet this trumped-up indication, the letter goes on to state:

"For this reason and in order that there may be no loss of time, also that it may be just as handy for you to get the remedies of this big, old-established company as of your druggist, I have shipped you to-day one full and complete treatment as per the prescription enclosed by Pacific Express, C. O. D. $3.50, which by the time this letter reaches you should be in your express office. I have prepaid the express charges, also the charges for the return of the money to us, so that all you are to pay is $3.50 only for the package."

In some cases, the Interstate Remedy Company sends its package of pills by mail instead of by express. If, in such instances, the recipient of the pills does not send the $3.50, he receives a long series of follow-up letters urging him to remit. Each letter is more insistent than its predecessor until at last one arrives that purports to come from the firm's attorneys and threatens legal reprisal. If the money is still not forthcoming, another "lawyer letter" comes offering to take one-half the amount of the bill!

If, on the other hand, the patient is foolish enough to send $3.50, about a week later he receives another letter—printed so as to indicate a personal typewritten communication—telling him that a month's treatment is on the way and will be delivered by the express company on the payment of $6.00. Of course, "$6.00 is a special price for a month's treatment, being one dollar less than two fifteen-day treatments would cost if sent separately."

BLACKGUARDING THE DRUGGIST

Like most mail-order quacks, the Interstate Remedy Company does not like the druggist any more than it loves the physician. While the Detroit concern states in its booklet that Urikol and Kydnus may be obtained from any druggist on special order, yet it would prefer "that you obtain them from us direct, for several reasons." One of the reasons is that "the medicine should be in tablet form" and, of course, the druggist does not know how to make tablets! Another reason is that "there are a number of ingredients in each of Formulas 1 and 2 and unless they are thoroughly mixed together the synergizing effect is lost." This "synergizing" humbug will sound familiar to physicians who remember the great stress that the purveyors of so-called ethical proprietaries used to lay on this same point a year or two ago in exploiting their wares. "Synergizing" has long been such a favorite piece of clap-trap among the nostrum fraternity that it is entirely fitting that the Interstate Remedy Company should bring it into use.

But the vital reason that you should order Urikol and Kydnus from Messrs. Hayes, Bourke and Coon, *alias* A. E. Robinson, is that "a great many unscrupulous druggists try to deceive their customers into taking something they do not want, and which may be a positive damage to you rather than a benefit." So the patient is warned that if he orders his Interstate Remedy "dope" through his local druggist he should insist on the druggist giving him the empty packages in which Kydnus and Urikol came!

WHAT ARE URIKOL AND KYDNUS?

To determine the composition of the prescription fakes in Formulas 1 and 2, that is, Urikol and Kydnus, it was decided to obtain specimens of these products direct from the Interstate Remedy Company. Accordingly, a Chicago druggist was asked to write direct to the Interstate Remedy Company for an original package of Urikol and an original package of Kydnus. This was done, but the Detroit concern, instead of sending what was ordered, tried to do what it has charged druggists with doing, substitute, and sent one of its packages of pills similar to the regular $3.50 C. O. D. "treatment." This the druggist returned and insisted that he wanted half-ounce packages of Urikol and Kydnus, respectively. These finally came and were turned over to the American Medical Association laboratory for investigation. The Association's chemists reported as follows:

LABORATORY REPORT

Urikol.—The powder in the box labeled "Urikol" is greenish yellow in color and possesses an odor in which, among others, that of buchu is most prominent. Quantitative analysis yielded the following results:

Water-soluble matter	37.93 per cent.
Alcohol-soluble matter	0.55 per cent.
Chloroform-soluble matter	3.67 per cent.
Insoluble matter	52.96 per cent.
Moisture	5.20 per cent.
Undetermined	0.69 per cent.
	100.00

The portion soluble in water contains what appears to be sugar and some drug extracts, the most prominent appearing to be buchu. The alcohol-soluble part has in general the same properties as the water-soluble portion. The substance soluble in chloroform was identified as hexamethylenamin. The portion insoluble in the above solvents consists approximately of equal parts of starch and calcium carbonate. The remainder of the powder is chiefly moisture. The presence of alkaloids, arsenic or metals could not be demonstrated.

From these results it appears that the powder called Urikol is essentially a small quantity of hexamethylenamin and some drug extracts in a mixture of starch, sugar and calcium carbonate.

Kydnus.—The powder in the box labeled "Kydnus" is light brown in color, possessing a taste and a slight odor of hydrogen sulphid. Quantitative analysis yielded the following:

Water-soluble matter	38.75 per cent.
Dilute acid-soluble matter	27.20 per cent.
Concentrated acid-soluble matter	2.94 per cent.
Insoluble matter	28.08 per cent.
Moisture	2.80 per cent.
Undetermined	0.23 per cent.
	100.00

The portion soluble in water consists of about 32 per cent. sugar and the rest potassium and calcium sulphates. The acid-soluble part consists of about 27 per cent. calcium carbonate and about 0.2 per cent. calcium sulphid. The portion soluble in concentrated acid consists of iron equivalent to about 3 per cent. ferric oxid. The residue insoluble in the above solvents is practically entirely starch. The remainder of the powder is chiefly moisture.

From these results it is concluded that Kydnus is essentially a mixture of calcium carbonate, starch and sugar containing a small quantity of calcium sulphid and iron.

As usual, of course, it is found that the nostrums used by these quacks are drugs that are in common use by regular physicians. It is the same old story: Well-known drugs enveloped in a cloud of secrecy and mystery, endowed with properties they do not possess and sold at a price enormously in excess of their worth.

"WEAK WOMEN" ALSO

Nor do these quacks confine themselves conclusively to the "recipe for men" fraud. They have, as a sideline, the "Interstate Woman Medicine," by which they are able to humbug suffering women. In their booklet "How Women Cure Themselves at Home" they repeat almost verbatim some of the matter that appears in the other booklet issued to "weak men." To quote:

URIKOL AND KYDNUS	WOMAN MEDICINE
"When a man is young he makes body poisons by the philter full, but the vigor of his tissues casts them forth."	"When a woman is young she makes body poisons by the philter full, but the vigor of her tissues casts them forth."
"The body suffers in brain and muscle and nerve; to greater extent than the liver; most disastrously of all in the kidney."	"The body suffers in brain and muscle and nerve; to greater extent in the liver; most disastrously of all in the kidney, bladder and organs of generation."
"In short, with advancing age a man must seek kidney help. It must be fortified. Its tasks overmaster its strength. Its outcry is feebleness."	"In short, with advancing age a woman must seek help for the vital organs. These are her weak spots. They must be fortified. Their tasks overmaster their strength. Their outcry is feebleness."

"What even pretty well people should have, we think, is kidney help. The waning power of the body to get rid of its own poisons makes intelligent assistance imperative."

"It is a duty you owe yourself to take heed of your kidney's health. You have no excuse for neglect. There is little chance for escape in our opinion."

"Therefore, use the Urikol and Kydnus treatment—it has every recommendation; simple, safe and quick acting, and consequently inexpensive."

"What even pretty well women should have, we think, is help for weakness. The waning power of the body to get rid of its own poisons makes intelligent assistance imperative."

"It is a duty you owe yourself to take heed of your health. You have no excuse for neglect. There is little chance for escape in our opinion."

"Therefore, use the 'Woman Medicine' treatment — it has every recommendation; simple, safe, quick acting and consequently inexpensive."

All of which means that the Interstate Remedy Company exists not for its pretended purpose of furnishing professional advice and treatment to the ill, but to capitalize sickness and wring dividends from distress.

MAIL-ORDER FAKES

Founded on falsehood, maintained by deceit, dependent on ignorance—mail-order medical fakers are concerned only with the commercializing of suffering. In place of the knowledge of the family physician, they offer only an ignorance that is as dense as it is dangerous; for the kindly personal interest of the home doctor, they substitute a set of "form letters"; instead of the confidential and private consideration of the patient's infirmities, the mail-order quacks give them all the publicity of a large corps of mailing clerks and finally sell the patients' letters to others in the same business; in place of an individualized treatment, they prescribe stock pills and tablets of the cheapest and least reliable kind—instead, in fact, of treating the patient as a suffering, human entity, the victim of sickness is a mere customer in whom the quack is interested only to the extent of the length of his purse or the ease with which he may be swindled.

Correspondence

The Tabulation of Cases of Tuberculosis After Treatment in Sanatoriums or Dispensaries—Follow-Up Work

To the Editor:—In THE JOURNAL, Sept. 2, 1911, occurred a thoughtful article by Dr. Lawrason Brown, of Saranac Lake, concerning "Sanatorium and Dispensary Treatment of Tuberculosis."

In the course of this article the following statement appears:

> A number of dispensaries in America have published reports of the immediate results of treatment, but such figures carry far less weight than the percentage of living, dead and untraced among a number of carefully classified patients. There is no doubt great difficulty in following these patients either to their death or to recovery at the end of five years, but with the excellent facilities at the disposal of many modern dispensaries, such for instance as the visiting nurses, the various relief associations and the hearty cooperation of the boards of health, such work should present no insurmountable difficulties . . . It will be of great value to compare results obtained in the dispensaries before and after the introduction of this method. Many patients from the dispensaries are sent to the sanatoriums. On return they should report to the dispensary. These patients should be studied separately and the problem of the best treatment of tuberculosis might then be solved.

It was with precisely this view that, during the summer of 1909, I appointed two physicians to visit the 115 tuberculosis dispensaries of the State Department of Health of Pennsylvania for the purpose of gathering and tabulating statistics concerning the individual tuberculous patients. It will be borne in mind that the department was not established until 1905 and the appropriation enabling the department to undertake a campaign for the control of tuberculosis was not made until 1907. The dispensary system was inaugurated at the close of that year, but it was not until the middle of the year 1908 that it was perfected.

It will be observed that the only means of admission into state sanatoriums is through a dispensary, the certificate of the dispensary physician being essential.

The examination of the patient on making application at the dispensary is thorough, including family history, environment, previous condition of health, present illness and physical examination, and a nurse's report which goes fully into the sociologic conditions of the family. The certificate of the dispensary physician for admission to a sanatorium contains an expression of opinion as to the stage of the disease, whether incipient, advanced or far advanced. On admission to the sanatorium a careful examination is again made which is repeated at frequent intervals. On the discharge of the patient, the dispensary from which he was accredited to the sanatorium is at once notified and takes up further supervision of the treatment. It becomes the duty of the dispensary nurse, however, if the patient does not again resume attendance on the dispensary, to inspect the patient at his home in March and September of each year and report his condition to the medical director of the sanatorium from which he was discharged. This report indicates the condition

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HEALTH,

REPORT—CONDITION OF EX-PATIENT.

Dispensary No. ..... Date, ... 191

Name ..... Age ..... M. F. W'h. Bl. S. M. W. Div. Sep.

Address ..... R. ..... Town ..... County

Patient at Pennsylvania State Sanatorium at .....

Admitted ..... 191 ... No. of Admissions ..... Classification ..... *

Discharged ..... 191 ... Result ..... Room .....

Was Dispensary Patient. Yes: No. Classification ..... Regular Attendant, Yes: No.

Occupation prior to onset of illness ..... Present Occupation .....

Indicate condition by (X). Leave other spaces blank.							Before Illness	Present
	0	1	2	3	4	Scale		
Cough							Hours able to work	
Expectoration							Hours work indoors	
Short of Breath							Place employment daily	
Blood in Sputum							Average monthly earnings	
Appetite good							Self supporting	
Indigestion							Family income per month	
Diarrhoea							Number to be supported	
Weariness							Habits, tobacco: Hope, Mod., Exc.	
Pain on Motion							Habits, alcohol: Hope, Mod., Exc.	
Night Sweats							Hours in bed: Night	
							Hours in bed: Day	
Weight: On discharge ..... lbs. Present ..... lbs.							Separate bed	
Temperature ..... A. ..... P. M.							Separate room	
Pulse ..... A. ..... P. M.							No. windows in bedroom open	
Respiration ..... A. ..... P. M.							No. windows in bedroom closed	
Present form							Hours in open air daily	
Since Discharge:							House or room clean, Yes: No. Overcrowded, Yes: No.	
Hemorrhages, Yes: No: Number							Observance of instructions as to mode of life, etc.	
Frequency ..... Amounts							Tuberculosis in immediate family:	
Disease							NO. LIVING / DIED / Cause of death / Contracted before or after Consulting / Contracted before or after Illness, if Yes	
Tuberculin treatment at San., Yes: No: How long								
Tuberculin treatment in Disp., Yes: No: How long								
Remarks:							Remarks. (Note especially patient's general condition as it appears to you)	
Signed, ... Nurse.							Signed, ... Physician in charge	

(If Yes, give other side for information.)

REPORT CONDITION OF EX-PATIENT.

Sanatorium Case No. .....

Name .....

Date of Report ..... 191 After Discharge ... Years ... Months ... Days.

Condition: Satisfactory: Retrogressive .....

(Leave above spaces blank for yes or Questions.)

Physicians in charge of Dispensary will please instruct Dispensary Nurse to report ex-sanatorium patients in March and September of each year.

Reports should be forwarded not later than April 15 and October 15.

Send reports to Medical Director of Sanatorium of which the patient was an inmate.

A copy of each report should be kept on file in the Dispensary.

Please review each report carefully before mailing, and see that all questions are clearly answered.

of the patient's health in detail, comparative weight and capacity for work, with character of occupation. Thus the basis is laid for following up every case discharged from one of our state sanatoriums for an indefinite number of years. The first of these reports reached the sanatorium at Mont Alto in April, 1911, and the statistics are now being compiled. A similar scheme for the dispensaries has not yet been formulated but is in contemplation.

The reader will note that with the state's sanatoriums and the dispensaries all under the centralized governmental control of the department of health, a scheme of organization is at once available for following up each individual patient until we know how many patients with incipient tuberculosis remain well, how many patients in whom the disease is arrested remain quiescent or go on to cure and how many cured

patients remain cured after a period of years, and after all until we have compiled such statistics for a period of years we shall not be able to say definitely how much good we are accomplishing with hospital and dispensary treatment.

Accompanying is the blank on which the nurse's report is to be returned.

SAMUEL G. DIXON, M.D., State Health Commissioner,
Harrisburg, Pa.

Virchow and Pasteur

To the Editor:—All those who relish rich and lofty natures, great characters who have marked their impress on a whole generation, and left of their passage a trace that time shall not obliterate, will have read with interest and emotion your editorial in THE JOURNAL, Sept. 9, 1911, page 904. The very day your article was published was the anniversary of that on which Virchow was laid to rest nine years ago; and it was indeed a fitting tribute to him to commemorate on such a day the personality of this great man, and to take as the motto of his eulogy what was the characteristic of his personality: his generosity.

A great scientist, a great educator and above all a great citizen and patriot—Virchow was all that, and to a degree that is uncommon to see combined in a single man. An absolute faith in the progress and the destinies of humanity, to which he had devoted all the gifts of his rich nature, and an ardent and generous sympathy for anything that was noble and great were among the most eminent characteristics of Virchow. And so, when he was called on to take the defense of Pasteur, and to vindicate his memory before the German scientific world, he had no great effort to make: he had only to obey the commands of his lofty nature. As for Pasteur himself, there is a peculiarity concerning his attitude toward Germany which has not been put in the proper light, and which, distorted as it has been by the passions of the time, is apt, if left unchallenged, to misrepresent him before posterity.

Your editorial seems to ascribe Pasteur's unwillingness to accept the distinctions offered him by the German government to a natural soreness over the reverses of his country in the Franco-German war. This is not, however, the true reason of his attitude.

Men of the present generation could not adequately realize the stress of calamities and horrors that were visited on France during that unfortunate war. To recall them to-day would be to revive unnecessarily the bitterness and the animosities of a conflict on which, in the interest of peace and the comity between nations, it is preferable to let impartial history pass judgment. But while we admit that war is war, and that its excesses and violences must be condoned in a spirit of philosophic equanimity, if not of absolute submission, it is nevertheless true that the rigors and the bitterness evinced during the Franco-German conflict must have strained the fibers of patriotism to a point that left in the heart of a man like Pasteur an unconquerable soreness, to put it very mildly. As Virchow mentioned in his address, the unfortunate city of Strasburg, endeared particularly to Pasteur by family ties, sustained a continuous bombardment from August 14 to September 28, which made of that old and magnificent city a pile of ruins, including its lofty cathedral. And to cap the climax, what must have been for a scientist and a patriot an unforgivable affront, is the fact that the German scientists hastened to return their French distinctions, and to sever their scientific connections with their erstwhile rivals, now become their vanquished enemies. Virchow alone indignantly refused to participate in such undignified proceedings. In recalling those unfortunate episodes, my purpose is merely to point out that what seemed to superficial or misinformed observers the vain exhibition of a pique or the bitterness of national vanity, was in reality the deep feeling of self-respect and of wounded patriotism. It would have been unworthy the name of a true patriot to accept any distinctions from the German government, on whatever ground or pretext they were proffered. And such, we confidently expect, will be the verdict of impartial history, to which we must always appeal in these controverted matters. A. DELCOURT, M.D., SR., Houma, La.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TECHNIC OF PROCURING NORMAL HUMAN BLOOD-SERUM

To the Editor:—Can you give me the technic of procuring normal human blood-serum? I have a case of epistaxis in a child of 6 who has had general nose-bleeding for several years, sometimes on one side and sometimes the other. He has had diphtheria antitoxin three or four years ago and I have given him an injection of normal serum (horse), which was followed by rather alarming symptoms of anaphylaxis so that I feel in doubt about using further horse-serum.

J. H. FARBER, M.D., Dayton, Ohio.

ANSWER.—For obtaining sterile human serum, use either a large antitoxin syringe or a large glass pipette, depending on the quantity of blood desired. Connect to this a medium-sized needle (an antitoxin needle does very well), and sterilize, preferably by boiling. Apply a rubber constrictor not too tightly about the fleshy part of the upper arm; cleanse the skin over the antecubital fossa with alcohol (50 to 70 per cent.) and insert the needle into the most dilated vein of the fossa. With a little practice, this can be accomplished without difficulty. Withdraw the desired quantity of blood by gentle aspiration (mouth suction is necessary if a pipette be used). Before withdrawing the needle, remove constrictor and cover site of insertion with an alcohol sponge. Then pull out the needle quickly and elevate the arm for a short time to avoid the formation of a hematoma. No dressing is necessary.

To obtain the serum: (1) After removing the needle and rubber connection from the syringe, and rapidly flaming its tip, expel the blood into a sterile container. Place this on its side on ice for eight or twelve hours, after which time the serum will be found free from the clot. Or (2) expel the blood into a sterile container within which is a small coil or loop of wire. Defibrinate by means of this by simply shaking the container and centrifuge off the corpuscles, using aseptic precautions. The former method usually yields the larger quantity of serum, and is to be recommended when haste is not an object.

GRADUATE STUDY ABROAD

To the Editor:—I am seeking some information relative to a graduate course abroad. First, is a knowledge of German imperative, for instance, to pursue successfully a course of study on the eye, ear, nose and throat in Vienna or Berlin? If so, can you refer me to a suitable book from the study of which one might be able to get a fair working knowledge of the language in a few months of study at home? Can you furnish me with data relative to the courses of study—for instance, length, cost, character—whether clinical or didactic—and the best time of the year to pursue such a course.

J. B. MORTON, M.D., Ridgefarm, Ill.

ANSWER.—Practically all of these questions were taken up in detail in THE JOURNAL, April 8, 1911, p. 1056.

TECHNIC OF WASSERMANN TEST

To the Editor:—Where can I find the necessary information to perform the Wassermann test? R. F.

ANSWER.—A description of the technic of the Wassermann serodiagnosis of syphilis may be found in THE JOURNAL, Oct. 15, 1910, p. 1308. Reference may also be made to the following article: Fleischmann and Butler: Serum Diagnosis of Syphilis, THE JOURNAL, Sept. 14, 1907, p. 934. The method may be found in the later text-books on clinical diagnosis; for instance, Anders and Boston, or Simon.

THE INTERNATIONAL MEDICAL CONGRESS

To the Editor:—Please be kind enough to advise if you have any information as to the postponement of the International Medical Congress, which is to hold its next session in London. I have seen somewhere a report that the session has been postponed to 1913.

CHARLES WOOD FASSETT, St. Joseph, Mo.

ANSWER.—The Seventeenth International Medical Congress is to be held at London, Aug. 6 to 12, 1913. The general secretary is Dr. W. P. Herringham, 40 Wimpole Street, London, W., Eng.,

The Public Service

Medical Department, U. S. Army

Changes during the week ended Sept. 30, 1911.

Wing, Franklin F., dental surgeon, ordered to proceed from Fort D. A. Russell, Wyo., to Fort Lincoln, N. D., for temporary duty.

Whaley, Arthur M., captain, detached to represent the Medical Department of the Army at the sixteenth annual session of the Seaboard Medical Association of Virginia and North Carolina, to be held at Newport News, Va., Dec. 5 to 7, 1911.

Suggs, Frank, and Hall, William E., ordered to report in person, Oct. 2, 1911, to the Army Medical School for the required course of instruction.

Stallman, George P., M.R.C., granted two months' leave of absence, to take effect about Nov. 1, 1911.

Giffin, Adolphe M., M.R.C., on arrival at San Francisco will proceed to Fort Riley, Kan., for duty.

The following named first lieutenants of the Medical Reserve Corps, recently appointed, are ordered to active duty in the service of the United States and will repair to this city and report in person on Oct. 2, 1911, to the Army Medical School for a course of instruction: Baylis, James E.; Bunker, Sidney M.; Castlen, Charles R.; Dailey, Michael A.; Hammond, Johnson F.; Meister, William B.; Tarleton, Lessen O., and Wilde, Adna G.

Medical Corps, U. S. Navy

Changes for the week ended Sept. 23, 1911.

Owens, W. D., P. A. surgeon, detached from naval hospital, Newport, R. I., and ordered to the training station at that place.

Baker, M. C., P. A. surgeon, detached from training station, Newport, R. I., and ordered to the hospital at that place.

Seaman, W., surgeon, detached from the naval station, Pensacola, Fla., and ordered to the naval disciplinary barracks, Port Royal, S. C.

Jenness, B. F., P. A. surgeon, ordered to the naval hospital, Norfolk, Va.

Kelley, H. L., P. A. surgeon, detached from the navy-yard, Mare Island, Cal., and ordered to duty at the naval hospital, Norfolk, Va.

The following assistant surgeons have been detached from respective stations and ordered to the naval medical school, Washington, D. C., for instruction: R. H. Lanning, from Mare Island hospital; P. B. Ledbetter, L. Sheldon, R. F. Jones, from naval hospital, Norfolk, Va.; J. C. Parham, from naval hospital, Philadelphia; C. M. George, from naval hospital, New York.

Schier, A. R., A. A. surgeon, ordered to marine recruiting station, Kansas City, Mo.

Changes for the week ended Sept. 30, 1911.

Wheeler, W. M., surgeon, detached from the *Kansas* and ordered to the naval hospital, Norfolk, Va., for treatment.

Whiteside, L. C., P. A. surgeon, detached from the *New Jersey* and ordered to the navy-yard, Boston.

Reeves, I. S. K., P. A. surgeon, detached from the navy-yard, Philadelphia, and ordered to the *Iowa*, *Indiana* and *Massachusetts*.

Bacon, S., P. A. surgeon, detached from command of the naval hospital, Fort Royal, S. C., and ordered to the naval disciplinary barracks and additional duty at the naval hospital, Port Royal, S. C.

Noble, D. H., P. A. surgeon, ordered to the navy-yard, Philadelphia.

Eytinge, E. O. J., P. A. surgeon, detached from the *South Dakota* and ordered to the *Cincinnati*.

Dykes, J. R., P. A. surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the *South Dakota*.

Holeman, C. J., P. A. surgeon, ordered to the navy recruiting station, Indianapolis.

Raison, T. W., P. A. surgeon, detached from the navy recruiting station, Indianapolis, and ordered to the *Florida*.

Smith, W. B., P. A. surgeon, resignation as a passed assistant surgeon in the Navy accepted, to take effect Oct. 1, 1911.

Woodland, E. E., asst.-surgeon, detached from the *Indiana*, *Iowa* and *Massachusetts* and ordered to the *New Jersey*.

Cecil, A. B., asst.-surgeon, resignation as an assistant surgeon in the Navy accepted, to take effect Oct. 1, 1911.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Sept. 27, 1911.

Cobb, J. O., surgeon, relieved from duty at Milwaukee, Wis., and directed to proceed to Chicago and assume command of the service.

Stimpson, W. G., surgeon, granted seven days' leave of absence from Sept. 20, 1911, under paragraph 189, Service Regulations.

Nydegger, J. A., surgeon, granted one month and fourteen days' leave of absence from Sept. 24, 1911.

Mathewson, H. S., P. A. surgeon, directed to proceed to Milwaukee, Wis., and assume charge of the service.

Grubbs, S. B., P. A. surgeon, granted one month and nine days' leave of absence from Oct. 31, 1911.

Robinson, D. E., P. A. surgeon, directed to proceed to Naples, Italy, for duty.

McClintic, T. B., P. A. surgeon, directed to proceed to New Berlin, N. Y., via Albany, N. Y., on special temporary duty.

McLaughlin, A. J., P. A. surgeon, directed to proceed to certain ports on the drainage basin of lakes Michigan and Superior on special temporary duty.

Guthrie, M. C., P. A. surgeon, granted one month's leave of absence from Oct. 1, 1911.

Bean, L. C., A. A. surgeon, granted thirty days' leave of absence from Sept. 22, 1911.

Cleaves, F. H., A. A. surgeon, granted twenty days' leave of absence from Oct. 4, 1911.

Gill, S. G., A. A. surgeon, granted twenty days' leave of absence from Oct. 5, 1911.

O'Neil, A. A., A. A. surgeon, granted seven days' extension of annual leave on account of sickness, from Aug. 1, 1911.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, Oct. 18-20.
Delaware State Medical Society, Lewes, Oct. 10.
Idaho State Medical Association, Boise, Oct. 11-13.
Kentucky State Medical Association, Paducah, Oct. 24-26.
Medical Assn. of the Southwest, Oklahoma City, Okla., Oct. 10-12.
Medical Society of Virginia, Richmond, Oct. 24-27.
Mississippi Valley Medical Association, Nashville, Tenn., Oct. 17-19.
Nevada State Medical Association, Reno, Oct. 10-12.
Vermont State Medical Society, Burlington, Oct. 12-13.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty-Fourth Annual Meeting, held in Louisville, Ky., Sept. 26-28, 1911

The President, DR. HERMAN E. HAYD, Buffalo, in the Chair

Officers Elected

The following officers were elected for the ensuing year: President, Dr. Xavier O. Werder, Pittsburgh; vice-presidents, Drs. Louis Frank, Louisville, and M. A. Tate, Cincinnati; secretary, Dr. E. G. Grinkle, Cincinnati; treasurer, Dr. Herman E. Hayd, Buffalo.

The next annual meeting will be held in Toledo, Ohio, September, 1912.

Another Protest Against the Routine Use of Purgatives

DR. EDWIN WALKER, Evansville: Purgatives are used entirely too often by the profession and laity. This routine use is vicious and does much harm. Is it good practice to assume that every one who requires a surgical operation likewise requires a purge? If there is fecal impaction a single purge will not remove it; several days at least will be necessary. The purgative increases the amount of fluid and also stimulates germ activity, which renders the condition less favorable for an operation on the intestine or elsewhere. Careful study of each case with more accurate diagnosis will almost do away with the habitual use of laxative drugs. The purge after a surgical operation is needed in some cases to prevent accumulation in the rectum, which is not serious but causes some discomfort. Quiet and limited diet are the causes of their failure to act, and when a liberal diet can be taken, laxatives are rarely required. The purgatives cannot remove infection. For local or general peritonitis following a laparotomy it is contraindicated. For seven years I have not given a purge before a surgical operation, except in rare cases, not 1 per cent. Patients are stronger and in a better condition for the ordeal. They have done better in every way, were more comfortable, and the abdominal cases had less pain and tympany. Gas pains were much less frequent. There were no complications which could be ascribed to the omission of the purge. Routine purgation in all surgical cases is absurd, is contrary to reason, and should be abandoned.

DISCUSSION

DR. E. GUSTAV ZINKE, Cincinnati: It is my practice to take a daily scant teaspoonful of epsom salts. After this is taken the bowels act naturally and satisfactorily in from fifteen to twenty minutes after breakfast. This must be associated with a mixed diet, solid food and exercise to keep the tone of the muscular structure of the colon in its natural function. Diet and exercise, with a little saline every morning before breakfast, will answer in the vast majority of cases.

DR. H. W. LONGYEAR, Detroit: If you give cathartics in cases of enteroptosis, it is extremely harmful. If the practitioner has a colon to deal with which is angulated and dropped down into the pelvis, if he gives the patient having that trouble catharties he is going to do him or her, as the case may be, a vast amount of harm. He is whipping the colon into an increasing action. It is like whipping a tired horse.

DR. WILLIAM H. HUMISTON, Cleveland: We should distinguish between a purgative and a laxative. A purgative is an irritating medicine always, while a laxative is not. I would dislike to continue the practice of my specialty unless I could avail myself of the benefits of what I call tonic laxatives. In my abdominal operations, where the patients are in the hos-

pital, I have the bowels thoroughly cleaned out two days before operation by the administration of a dose of castor oil. A short time before the operation a high enema is given.

DR. JOSEPH M. MATHEWS, Louisville: I believe that six-tenths of the people are constipated. If that is true, what are we going to do to unload their bowels? What harm can a purgative or laxative do if you give it two days before an operation to unload the bowel of toxins or of fecal matter? The daily administration of a laxative is a good thing. Why not? The bowel is the sewer of the body, and why not wash it out, and what harm does it do to wash it out? You cannot simply prescribe a purgative and let these patients go. You cannot relieve them by prescribing a purgative. Many of them have pathologic conditions and in many of them there is an atonic condition of the bowel. Peristalsis is impaired and you must excite it, but it will take a long time to overcome the constipation from which some of these patients suffer. For a great many years I have given purgatives to patients two or three days before operating on them to empty the bowel. In many instances the condition of some of these patients who suffer from constipation is a surgical one, and oftentimes you are warranted with Mr. Lane and Mr. Mummery in removing the colon.

DR. HUGO O. PANTZER, Indianapolis: I would not denounce the routine use of purgatives as strongly as the essayist does. I would emphasize one point that is not usually observed, namely, to assume that a single bowel movement for each twenty-four hours is a cause of constipation in a vast majority of cases is radically wrong. There is no organ in the body that absorbs moisture with greater avidity than does the rectum, the stomach being secondary in this regard, and that means intestinal autointoxication. If there is anything I have learned before, during and after operation, it is that the specific gravity of the urine and quantity of urea and other indications of normal elimination by the kidneys are diminished, and owing largely to constipation. There is inconvenience for the human being to go to the closet whenever he or she, as the case may be, feels the desire, and hence nature's call is frequently disregarded, but we should invariably after we feel this prompting act on it to eliminate by the rectum. It is the rectal retention of feces that does great harm.

DR. CHARLES L. BONIFIELD, Cincinnati: It is necessary for the majority of people to have at least one evacuation of the bowels every twenty-four hours, and most people would be better off if they had more frequent evacuations. The laity use laxatives for the reason that they feel better after a free bowel movement. Many patients are constipated because the movement of the bowels is attended with more or less pain, and on account of this discomfort they put off going to stool as long as possible. In inflammatory conditions of the pelvis, I know of nothing except the prolonged use of hot douches that has so much tendency to deplete the congested pelvic organs as a free calomel purge, followed by a saline cathartic.

DR. JAMES F. BALDWIN, Columbus: When patients come to me with constipation as a marked symptom, I send them to a professional friend who makes diseases of the alimentary canal a specialty. If after a few weeks or months he finds he cannot cure these patients, I make a modification of the Lane operation; that is, switching the ileum from the beginning of the colon to the sigmoid. I have had no deaths from this operation, no morbidity, and the operation has given me in these bad cases excellent results.

Treatment of Sliding Hernia

DR. WALTER C. G. KIRCHNER, St. Louis: The principal steps of my operation are to convert immovable or adherent bowel into movable bowel; to make complete reduction possible; to construct the partial or incomplete sac into a normal complete sac; to permit ligation of the sac high up beyond the ring; to enable the complete repair of the hernia to be made by one of the typical and accepted operations for hernia. The sac, after it has been isolated, is incised on either side, near and parallel to the bowel, and in this way the bowel is provided with two lateral flaps of sac. The adherent bowel having been made movable beyond the ring, the sac flaps are turned back and sewed over the denuded area of bowel, and reposition of bowel into the abdominal cavity is thus made easy. The next step lies in the partial reconstruction of the sac so that ligation or suture at the neck as in normal cases is made possible. In fifteen operations by this method, there were ten for sliding hernias of the sigmoid and five for sliding hernias of the cecum. All the cases occurred in adult male patients. In one case, the sliding hernia was through the femoral ring, there being also present a right and a left inguinal hernia. In eight cases there were double inguinal hernias, and in two instances these were complicated by femoral hernias. Undescended testicle was encountered once, and hydrocele four times. In the fifteen cases twenty-five separate herniotomies were performed, all the patients making a satisfactory recovery.

DR. JOHN YOUNG BROWN, St. Louis: My experience has been limited to five cases; the hernia has been on the right side. In three of them the cecum and appendix were densely adherent to the sac, making it difficult to liberate the adhesions. Dr. Kirchner's method has been of the greatest possible value to me. There is one thing in dealing with these hernias that must be carefully avoided. As the essayist has shown, the sac is incomplete. In one of my cases in endeavoring to open the sac, the bowel being attached behind, I came near getting into the bowel proper. This sliding variety of hernia is attached behind by the folds of mesentery, and by opening the sac in front, lifting up the bowel in the manner in which he has described, cutting the sac at right angles, you should see to it that the bowel is returned so that there will be no constriction of it at this point.

Angioma of the Uterus, Bladder and Broad Ligaments

DR. HUGO O. PANTZER, Indianapolis: This was a case of racemose angioma of the uterus, bladder, urethra and broad ligament. The patient was 26 years of age, married, went through three pregnancies, two of which terminated at full term by forceps delivery. The cause of the dystocia was unknown. Both of the children were born dead. The third terminated in the second month, probably owing to the angioma. This event was followed by grave hematuria, and vesical tenesmus, and excessive metrorrhagia and menorrhagia. A fatal issue was averted by celiotomy and circumambient ligation. There was no more hematuria, except transient shortly after operating, provoked by exposure to cold and subsequent acute bronchitis and coughing. This attack of hematuria lasted two weeks, then it disappeared. Vesical irritability subsided gradually and permanently. Menstruation, which at first was profuse and prolonged, gradually became normal. One year and one-half later the patient developed suppurative appendicitis. Operation revealed a recurrence of the angioma in the broad ligament external to the previous seat of the neoplasm. Ligation was again resorted to. Examination of the patient two years after the first operation revealed the non-presence of angiomatous growth. There has been no return of the hematuria. The bladder is not irritable. Menstruation is normal. The patient's general health is good.

DISCUSSION

DR. WALTER B. DORSETT, St. Louis: I have had two cases of angioma of the uterus in which I have taken out the organ. In operating in cases in which we have a suspicion of angioma, I think the ligation of the vessels is best made *en masse*, and sew in the suture after thoroughly tying it with a No. 2 catgut ligature.

DR. FRANCIS REDER, St. Louis: I have met with various angiomatous conditions of the uterus in connection with fibroid tumors, where it was necessary to ablate the organ. Sometimes we meet with angioma in the broad ligaments, or the pampiniform plexus. We know that in these racemose angiomas we have destruction of the anterior uterine wall, and one finds a resisting organ of considerable density.

DR. CHARLES L. BONIFIELD, Cincinnati: I agree that it is best to ligate the ovarian arteries *en masse*, and during the report of this case it struck me that it might have been possible and would have made the operation easier, had Dr. Pantzer by ligating the ovarian artery on the right side proceeded to ligate the internal iliac artery, as we do in some cases of extensive cancer. In this way he would have had thorough control of the arterial supply of the tumor.

(To be continued)

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

Twentieth Annual Meeting, held at Milwaukee, Wis. Sept. 26-29, 1911

The President, Brigadier General George H. Torney, U. S. Army, in the Chair

The officers elected were named in THE JOURNAL, September 30, page 1144.

Foreign Delegates

The following delegates were present from foreign countries: France:—Surgeon Inspector Fevrier of the War Department, Paris, and Surgeon Second Class Ruotte of St. Martin's Military hospital, Paris; Argentine Republic—Dr. Jose Garrochateugui, chief surgeon of the Argentine Naval Commission in the United States and Regimental Surgeon Captain Antonio Agudo Avila, Buenos Aires; Canada—Lieutenant-Colonel Adam T. Shillington, A. M. C., Ottawa; China—Lieutenant-Colonel Hwang-I, chief surgeon, Second Division of the regular army and Lieutenant-Colonel Lu Ch'ang-en, chief surgeon Fifth Division of the regular army; Guatemala—Dr. Don Ramon Bengoechea, Guatemala City, and Great Britain—Surgeon-General Arthur William May, Royal Navy.

Entertainments

The entertainment provided by the local committee included, on Tuesday, after the public meeting, a reception and smoker at the University Club; on Wednesday, a palm garden luncheon; on Thursday, an automobile excursion around Milwaukee, with a luncheon at Whitefish Bay, and a theater party. The courtesies of the Milwaukee, University, Deutscher and Athletic clubs were extended to members and guests.

Public Meeting

The public meeting was held at the Conservatory of Music, Tuesday evening. Lieutenant-General Arthur MacArthur, U. S. Army, retired, was in the chair; Hon. Francis E. McGovern, Governor of Wisconsin, welcomed the members on behalf of the state, and Dr. Arthur J. Patek, president of the Milwaukee Medical Society, on behalf of the medical fraternity. The president delivered his annual address and the chairman of the evening made remarks regarding the overloading of the soldiers with equipment. In many of the addresses especial and affectionate mention was made of the founder of the association, a Milwaukeean, the late Col. Nicholas Senn. The foreign delegates were presented and addressed the audience, and each was presented with the insignia of the association.

Salvarsan

Surgeon Richard B. Williams, U. S. N., in his paper on "The Treatment of Syphilis with Salvarsan," described the method of administration and the results obained on board the U. S. S. *South Carolina*. He advocated the great advantage, from the standpoint of prevention, of treating all cases of syphilis by the intravenous administration of salvarsan. The mucous patches and condylomata being the most contagious lesions, the method of treatment which will cause the prompt disappearance of these lesions will have great value in preventing the spread of the disease. This is especially true in the military service where the use of drinking-cups or other utensils in common is more or less unavoidable.

Captain Henry J. Nichols, M.C., U. S. Army, reported the immediate clinical effects of the use of salvarsan in the Army. More than 1,200 patients were treated from January to September. In 422 of these cases the method of administration and results were as follows: intramuscular—142 cases of moderate, and 61 of severe results; intravenous—125 cases of moderate, and 60 of severe results, and subcutaneous—28 cases of moderate and 6 of severe results. By lesions the results were as follows: primary lesions—30 healed, 2 not healed; secondary eruptions—92 healed, 4 not healed; mucous patches—128 healed, 4 not healed; rupia—5 healed; iritis—10 healed; alopecia—2 healed; ulcers—14 healed, 3 not healed; joint pains—11 healed, 2 not healed; psoriasis—11 healed; headache—4 healed, 2 not healed; gummata—7 healed; paralysis—2 healed, 1 not healed. In all 94 per cent. were healed, and 6 per cent. not healed.

Captain Mathew A. Reasoner, M.C., U. S. Army, and Lieutenant Ray W. Matson, M.R.C., U. S. Army, considered some dangers of salvarsan, based on a study of three out of eighty-three cases healed by them, from which they conclude that the literature to date would lead us to believe that the untoward effects of salvarsan noted by them need be anticipated in only a comparatively small percentage of primary and secondary cases, and need not be feared in tertiary cases, or in those to whom salvarsan may be given for other purposes; that these manifestations are syphilitic and not arsenical; that it is not a safe procedure to treat primary or secondary syphilis with salvarsan alone or with salvarsan and mercury by the mouth; that mercury in such cases should be administered hypodermically or by inunction, or both, and that patients should be kept under most careful observation; that salvarsan cannot be advised as a routine measure; that no dependence can be placed on the Wassermann test as a danger signal; that proper treatment of such cases will include forced mercurialization, and at least in the ear cases, the administration of more salvarsan; that salvarsan will come into marked disfavor with many and that considerable harm will be done on account of its present haphazard administration.

New Rôle of the Bedbug

Passed Assistant Surgeon Ransom E. Riggs, U. S. Navy, as a result of observation of epidemics of typhoid fever on board ship and in homes, where the ordinary sources of infection were absent, concludes that the majority of home epidemics of typhoid fever are due to the activity of the bedbug. This conclusion is apparently borne out by both positive and negative observations which he reports.

Panama for Troops

Passed Assistant Surgeon John G. Ziegler, U. S. Navy, reported at tour of duty with a battalion of U. S. Marines on the Isthmus of Panama, and as a result of careful observations draws the following deductions: that the isthmus, as a place of continuous habitation for not more than two years, is as healthful as the average place in the United States, but after two years there is a tendency toward physical deterioration and mental unrest which renders longer residence unadvisable; that recruits or men in their first term of enlistment bear the tropics best; that to secure contentment, means of amusement and recreation must be provided; that a proper amount of work is beneficial and favors contentment; alternating drill and police periods relieves monotony and freshens the men; that the regular ration in use in the United States is best for the men; that sunstroke and heat exhaustion are rare and harm by actinic rays mostly theory; that the khaki uniform is satisfactory, and that, outside of malaria and certain skin affections, other tropical diseases are rare on the isthmus.

Gonorrheal Prophylaxis

Assistant Surgeon Reginald B. Henry, U. S. Navy, in his brief paper on "Calomel in Gonorrheal Prophylaxis," gives the result of a six-months' experience of the use of an ointment containing 50 grams of calomel, 80 c.c. of liquid petrolatum, and 70 grams of lanolin among the men of the U. S. S. *Rainbow*, on the Asiatic station. During the period named, there were 529 admitted exposures, with four cases of gonorrhea. Of these four patients, one denied exposure and did not receive the treatment; two received treatment more than twelve hours after the exposure, so that only one possible failure of treatment remained, a percentage of .189. He finds the calomel cheap, efficacious, cleanly and non-irritating. The ordinary glass penis syringe was used for the injection of the ointment.

Passed Assistant Surgeon Allan J. McLaughlin, U. S. Public Health and Marine-Hospital Service, read a paper on "Modern Methods of Quarantine against Asiatic Cholera." The presence of cholera in Europe at this time makes this account of the methods used at quarantines in this country to prevent the entrance of the disease into the United States of particular interest to the general public. Officers of the Public Health and Marine-Hospital Service are attached to the office of the

consuls in foreign ports where cholera is prevailing, to hold under observation for five days persons coming from infected districts, before they are allowed to ship for the United States. These persons are also kept under observation by the ship's surgeon during the voyage, and he reports any cases of sickness that may occur among them. When the vessel arrives at a port in the United States, a bacteriologic examination is made of each passenger to see if any of them have cholera, or is a cholera "carrier." A "carrier" is a person who has the germ of the disease in the body, though he shows no symptoms of the disease. These people are liable to spread cholera because no one knew they had the germ in them. The bacteriologic examination reveals the fact if they are cholera carriers, and they are detained. Those who are free of the infection can now be released from quarantine in from twenty-four to forty-eight hours, instead of being held for five days as was formerly the case.

(To be continued)

INTERNATIONAL MUNICIPAL CONGRESS AND EXPOSITION

Held in Chicago, Sept. 18 to 30, 1911

This congress, held under the auspices of the City of Chicago, Chicago Association of Commerce, Industrial Club Citizens' Association, Civic Federation, City Club United Charities, Rotary Club and Chicago Board of Underwriters, and officially approved by the United States Government, held its sessions in Chicago from September 18 to 30, inclusive. The sessions of the last three days were especially devoted to matters of municipal health, and the discussions were noteworthy in that the authors of papers and those who discussed them embodied their experiences in the particular subject, and the speeches were not, as it is usually the case, academic.

Control of Milk-Supply

After a full discussion on the control of milk-supply, the following conclusions were drawn: Cities should have testing of cows for tuberculosis; milk should be dated; icing should be required from the farm to the consumer; the sale of old milk should be prohibited; investigation of every case of contagious disease should show the milk-supply of the family, and the health department records should show the health record of every milk dealer, as regards communicable diseases among his customers. There should be a bacteriologic standard. The number of bacteria allowed should be lowest in cities where the milk is supplied by cows in the municipality; a higher number of bacteria should be allowed where the milk is hauled in wagons, and a still higher number should be allowed in cities into which milk has to be shipped by rail. Every city should use the dirt test. The method of bacteriologic examination approved was that which had been approved by the American Association of Certified Milk Commissions and the Laboratory Section of the American Public Health Association. The method of dirt examination approved was that in use in the Chicago Health Department.

Control of Contagion

A series of questions was sent to the members of the congress regarding this subject, prior to the meeting, and this gave a much higher tone to the discussion. The conclusions arrived at were: Houses should be disinfected after scarlet fever, diphtheria, tuberculosis, small-pox and anterior poliomyelitis; disease carriers should be excluded from schools; schools should not be closed on account of epidemics of scarlet fever, diphtheria and measles; vaccination should be required for all school children, diphtheria should be diagnosed on throat cultures to end quarantine, but clinical evidence should be necessary to install a quarantine, subject to revision by culture; a laboratory is necessary in the health department; typhoid fever should be made a reportable disease, and it is feasible to charge each case of contagion against the milk dealer (a committee consisting of Dr. John H. Landis, Cincinnati, and Dr. William A. Evans, Chicago, was appointed to draw up a plan of procedure); the health department should have a list of customers of each milk dealer; cases of late tuberculosis should be universally hospitalized, all small-pox should be hospitalized, and all schools should have physical and dental examinations.

Sewage, Stables and Slaughter-Houses

Questions were similarly sent to those who participated in this discussion, and the section arrived at the following conclusions: Yard privies should be allowed only in unsewered territories; the vault system should be used where there are sewers, and Stiles' boxes in unsewered localities; removal of contents of boxes should be made during the day rather than at night; removal should be by the municipality; privies should be licensed, and the ordinances should specify the type of construction and require a permit to build; the government type of closet and the government septic barrel should be required by law; stables should be licensed; manure boxes should be covered and should be impervious; the ordinances should specify the frequency of emptying at intervals of less than ten days; cow barns should be licensed; slaughter houses should be licensed; all meat, including that of calves, should be inspected and tagged, and killing of poultry should be controlled under license and should be done only in specified places.

Water Protection and Sewage

The discussion on protection of water and disposal of sewage was carried out only in part as the section adjourned to organize the Great Lakes Basin International Pure Water Association, which is noted elsewhere in this issue. Resolutions were passed, however, that no sewage or trade waste water should be allowed in lake waters untreated or uncontrolled, and that the government should take proper action to control ship sewage and the water-supply of ships.

(To be concluded)

AMERICAN ROENTGEN RAY SOCIETY

Twelfth Annual Meeting, held in Richmond, Va., Sept. 20-23, 1911

The President, DR. PERCY BROWN, Boston, in the Chair

Officers Elected

The following officers were elected to serve for the ensuing year: president, Dr. Frederick H. Baetjer, Johns Hopkins University, Baltimore; vice-presidents, Drs. H. W. Van Allen, Springfield, Mass.; G. M. Steele, Oshkosh, Wis.; J. H. Edmondson, Birmingham, Ala.; W. H. Eagar, Halifax, N. S., and Hollis E. Potter, Chicago; secretary, Dr. Henry K. Pancoast, University of Pennsylvania, Philadelphia; treasurer, Dr. Charles F. Bowen, Columbus, O.; librarian, Dr. H. W. Dachtler, Toledo, O.; executive committee, Drs. P. M. Hickey, Detroit; Arthur Holding, Albany, N. Y., and Alfred L. Gray, Richmond, Va.

Niagara Falls, N. Y. was selected as the place for holding the next annual meeting, September, 1912.

Requirements for Admission to Membership Raised

Hereafter an applicant for membership in the society must be a graduate in medicine and have been engaged actively in roentgenology for at least two years after his graduation, and he must submit a scientific paper on roentgenology to the executive committee at least six months before the next annual meeting, besides securing the recommendation of two members of the society and of at least one practicing physician or surgeon in good standing in his immediate neighborhood. The name and address of the applicant and the names and addresses of his sponsors must be published in the *Quarterly* at least twice before the next annual meeting.

Roentgenology and Its Relation to the Law

DR. PERCY BROWN, Boston: Of cases in which legal proceedings have been instituted for the alleged misuse of the Roentgen ray, occurrences are fewer than formerly. This is no doubt due to the fact that the clinical application of the ray is being relinquished by unqualified and incompetent persons. Evidence adduced by the ray is regarded much in the same light as a solar photograph would be. It is considered documentary evidence. The qualifications of the roentgenologist as a medical expert witness should be estab-

lished; his recognition in his own community and in a recognized society of his colleagues should be ascertained and certified to. In court an absolutely neutral attitude should place him beyond reproach. His evidence should be prepared carefully and with attention to detail. Except for purposes of his own identification, all records should be marked in the presence of the court at the time they are admitted as evidence. Unless his evidence can rest on the framework of his professional qualifications as an expert, it will lose weight and even be discarded.

Roentgen Ray in Hypertrophied Prostate

DR. JAMES W. HUNTER, Norfolk, Va.: The ideal treatment in hypertrophied prostate is radical removal of the gland. In the hands of expert operators who select their cases the results are excellent; in the hands of the occasional operator or the inexpert, the mortality is high. In selected cases roentgenotherapy is of great value. When the increase in size is due largely to overgrowth of the epithelium, the Roentgen ray will quickly diminish the size of the gland, but not so if there is much increase in the amount of connective tissue. The results from the treatment depend largely on the histologic structure. Massage is indicated as an adjuvant. The mortality is *nil*.

DISCUSSION

DR. HOLLIS E. POTTER, Chicago: It is not easy to differentiate by digital examination between a fibrous, muscular or epithelial enlargement of the prostate; but by raying the testicles as well as the prostate, we can produce an effect analogous to that produced by raying the ovaries and uterus, reducing the size of the gland considerably. I have, however, seen few good results follow the Roentgen treatment of hypertrophied prostate.

DR. GEORGE E. PFAHLER, Philadelphia: Sufficiently good results have been obtained by careful workers to cause us to consider this treatment of hypertrophied prostate in otherwise hopeless cases, and to justify its use. It is especially indicated in the case of old or decrepit patients who cannot stand an operation, and in patients in whom the question of procreation is not to be considered.

Postoperative Roentgenization in Cancer

DR. CLARENCE E. SKINNER, New Haven, Conn.: The Roentgen ray has demonstrated that it exhibits a powerful curative influence on malignant degeneration, hence its routine use as a postablative measure will increase greatly the number of curative cases. It is impossible to tell beforehand which cases will need roentgenization and which will not, or which cases will respond happily and which will not respond at all, hence the only way to be sure of treating all cases that will need it and that will respond, is to treat all cancer cases. Roentgenization should be commenced as soon after operation as is consistent with the safety of the tissues involved in the operation wound and before recurrence has had an opportunity to manifest itself. The application of the ray should be entrusted only to those who are competent and experienced. These patients should not be rayed before operation because the effect of vigorous radiation of the malignant growth is to produce a certain amount of systemic toxemia, which has been known to be severe enough to kill the patient. Such radiation also often leads to an increase in fibrous tissue, leading to such confusion of tissue and obliteration of normal tissue distinctions and relations as to embarrass the operator. Furthermore, effective pre-operative radiation means delaying the operation unnecessarily.

DISCUSSION

DR. GEORGE E. PFAHLER, Philadelphia: There is no doubt of the good effect of the Roentgen ray in these cases. Unfortunately, the average surgeon will only refer those cases in which there is bound to be a recurrence and in which, therefore, little good can be effected. Ante-operative radiation is not advisable as a routine procedure, although I do not believe that it is as harmful as Dr. Skinner seems to think. I have not seen any evidence of toxemia. However, postoperative treatment is certainly advisable and effective.

DR. J. H. EDMONDSON, Birmingham, Ala.: Is it not advisable to excise nodular recurrences in the scar before beginning the Roentgen treatment?

DR. W. H. EAGAR, Halifax, N. S.: We undoubtedly get a tremendous degree of toxemia from pre-operative treatment, but early and effective radiation following the operation is the proper thing. Unfortunately these patients are not referred to us until after recurrences have appeared.

DR. J. H. SELBY, Rochester, Minn.: I believe that surgeons are becoming aware of the value of immediate postoperative roentgenization in these cases, because when the treatment is carried out by an expert who cooperates with the surgeon the results are always good.

DR. FREDERICK H. BAETJER, Baltimore: The pre-operative treatment of such patients is criminal. The Roentgen ray is stimulative and destructive, and any such form of treatment of a malignant process is wrong. We must not do anything to increase cell division because that increases the possibility of metastases occurring. A carcinoma that is operable is a surgical condition and not to be treated by the Roentgen ray. So far as postoperative treatment is concerned I agree with the other speakers. I believe, however, that in many cases where enlarged glands are broken down by radiation these glands are not carcinomatous but simply enlarged as the result of an inflammatory condition or reaction.

Carcinomatosis of Bones Secondary to Growth in Some Epithelial Organ

DR. RUSSELL H. BOGGS, Pittsburgh: Carcinoma of the bone is always secondary. As a rule, it is not recognized until fracture occurs. It may be secondary to cancer situated in any part of the body, and any bone may be involved, although it is usually a long bone. It is slow-growing and gives rise to symptoms which frequently lead to a diagnosis of rheumatism.

DISCUSSION

DR. HENRY K. PANCOAST, Philadelphia: In one case I had there occurred a metastasis in the femur just below the great trochanter eight years after the removal of a cancer of the breast. In another case a similar metastasis occurred following the removal of a bronchial cyst which had undergone carcinomatous degeneration. I have also seen metastases in the vertebræ.

DR. GEORGE E. PFAHLER, Philadelphia: Patients who complain of vague rheumatic pains after operations for the removal of malignant growths often are later found to be suffering from a bone metastasis, and unless fracture of the bone occurs, the condition is not detected. A patient with recurrent carcinoma and metastases in the breast fell and broke his arm. I made a roentgenogram and found metastases not only in that arm, but in the other arm, and in one femur. Another patient fell and injured her hip. The roentgenogram showed distinctly a metastatic carcinoma and on careful examination the original tumor was discovered in the breast, a small cancer, of whose existence the patient was not aware.

DR. FREDERICK H. BAETJER, Baltimore: I have seen quite a number of cases of metastasis of cancer in bone. Four of these were in the femur following a primary cancer of the breast. The femora and the spine are the most frequent seats of cancerous metastases. I have had two cases of cancer of the humerus secondary to cancer of the stomach, and one case secondary to cancer of the bladder. In another case there were extensive metastases in the femur and in the scapula secondary to the breast cancer.

DR. GEORGE H. STOVER, Denver: In four cases of metastatic cancer of bones which I saw the primary tumor was situated in the breast. In one case the condition was not discovered until a fracture of the bone occurred twenty-five years after the removal of the breast cancer.

DR. JOHN H. SELBY, Rochester, Minn.: Following the removal of a tumor of the kidney, a patient developed sciatic-like pains. I found complete destruction of the pubes extending to the acetabulum. I have seen several cases of bone metastasis following cancer in distant parts of the body.

(To be continued)

Medical Economics

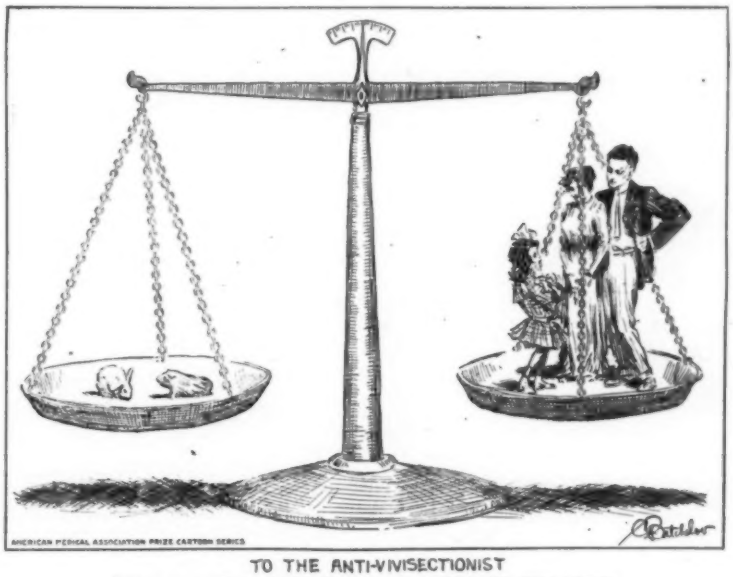
THIS DEPARTMENT EMBODIES THE SUBJECTS OF POSTGRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

MEN AND HOGS

Under this title, the Fresno (Cal.) *Republican* recently discussed health reforms, following Dr. McCormack's visit to that city. This editorial is a most rational and discriminating discussion on the unconscious attitude of the majority of people to health matters and is deserving of careful reading and consideration.

"Dr. McCormack, in his lecture last night, referred to the incongruity of the American government spending millions to eradicate the diseases of pigs and potatoes, and nothing to eradicate the diseases of men.

"The contrast is indeed somewhat startling, but the explanation is easy. For one thing, pigs and potatoes cost money, while men are cheap. Perhaps still more important, there are 'systems' or 'schools' with regard to the diseases of men, but none with regard to the diseases of animals or plants. Nobody ever offered to cure hog cholera by reading sermons to the swine, nor undertook to eradicate potato blight by spilling 1 drop of potato soup into the river from which the irrigation water came. Nobody ever tried to cure the boll weevil in cotton by untwisting some rootlets that had become entangled. Nobody ever undertook to argue the chinch bug out of existence by proving that it was inconsistent with the divine plan. And nobody would be listened to with seriousness if he proposed these things. We have passed the days of fetichism and witchcraft, in dealing with corn and cattle, and we accept scientific investigation as the way to find out scientific truth about them.



TO THE ANTI-VIVISECTIONIST
"AT HOW MANY RABBITS OR GUINEA PIGS DO YOU VALUE YOUR WIFE, YOUR HUSBAND OR YOUR CHILD?"

"But when it comes to human diseases, exactly these things are preached by the expounders of various sects of healing, and are devoutly believed by a multitude of adherents of those sects. The pear blight or the Anaheim disease we know to be facts, and when the scientists tell us they have not yet found the cause or cure of those diseases, we supply them with the money for further investigations instead of seeking some new magician who says he can cure them by incantations. But human diseases we know are mysteries; human physicians we know are magicians; and human healing we know to be a matter of faith, expressed in various creeds, each true to those that profess it and false to all others.

"This is a government by the people, and the people, in vast multitudes, believe these things. What matters it then that the divine penalty of sanitary heresy is death? We have fought out freedom of faith in theology, where the penalty of error is hell. Shall we not protect it in pathology, where the penalty of error is merely death? Is not the liberty of people to cure small-pox by abacadabral signs more precious than the lives of the citizens? Therefore, by what right shall the government establish a department for the scientific investigation and control of public health problems, when multitudes of people prefer faith in a creed to the collected results of scientific knowledge?

"This is the argument. It is illogical and ridiculous, but millions of entirely serious people believe it, and, so long as they do the right of a free government to care for human health will be abridged. Doubtless if hogs had votes, there would be similar limits on the protection of hogs. Any pig would prefer cholera swill to a protective inoculation. We respect the liberty of humans, but not of hogs, to indulge such preferences."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

[NOTE.—The pamphlets containing the outline of the postgraduate study course for county societies for the coming year are ready for distribution. Secretaries of county societies can secure supplies by writing to the Secretary, Council on Health and Public Instruction, American Medical Association, 535 Dearborn Ave., Chicago.]

General Subject for the Month: Surgery of the Brain

Second Month—First Weekly Meeting

ANATOMY OF SKULL: DEMONSTRATE SPECIMEN

VERTEX OF SKULL: External surface—boundaries, bones included, sutures, glabella, bregma, inion.

Internal surface—shape, surface markings.

BASE OF SKULL: Internal surface, fossæ.

Anterior Fossa: Shape, boundaries, bones, portion of brain, foramen cæcum, olfactory groove, ethmoidal foramina.

Middle Fossa: Boundaries, bones, portion of brain, optic foramen, sella turcica, cavernous groove, sphenoidal fissure, foramen ovale, foramen spinosum, foramen lacerum medium, anterior surface of petrous portion of temporal.

Posterior Fossa: Shape, boundaries, bones, portion of brain, foramen magnum, jugular foramen, internal auditory meatus, inferior occipital fossæ.

EXTERNAL SURFACE: Boundaries, occipital, temporal, sphenoid and ethmoid bones, articular surfaces, orifices of foramina mentioned above, stylo-mastoid foramen. Roof and apex of orbit.

LATERAL REGION: Boundaries, bones.

Temporal Fossa: Boundaries, sutures, stephanion, pterion.

Mastoid Portion: Bones, mastoid process, auditory meatus.

Zygomatic Fossa: Spheno-maxillary fossa.

ANATOMY OF BRAIN

MEMBRANES OF BRAINS: (1) Dura mater; (2) arachnoid; (3) pia mater.

PORTIONS OF BRAIN: Medulla, pons Varolii, cerebellum, midbrain, cerebrum.

VENTRICLES: Lateral, third, fourth, foramen of Magendie, aqueduct of Sylvius, communications, contents.

DISTRIBUTION OF GRAY AND WHITE MATTER: (1) in the bulb; (2) in the pons; (3) in the midbrain; (4) in the cerebrum; (5) in the cerebellum.

BLOOD-VESSELS: (a) To meninges; (b) to pia and brain substance. Circle of Willis and branches. Charcot's "artery of cerebral hemorrhage." Cerebral veins and sinuses.

PHYSIOLOGY OF THE BRAIN

SENSORI-MOTOR AREA: Fissure of Rolando, anterior and posterior central gyri, paracentral lobule, operculum, third frontal gyrus. Leg, arm and head regions. Hemiplegia, monospasm, Jacksonian epilepsy. Muscular sense, parietal lobes. Pressure, pain, temperature, sense.

SPEECH AREAS: Sylvian fissure, third frontal convolution, motor aphasia. First and second temporal convolutions, sensory aphasia. Visual speech area, lower parietal. Right- and left-handed persons.

SIGHT AREA: Occipital lobes, hemianopsia. Two visual centers.

SOUND AREA: First and second temporal convolutions.

PSYCHIC CENTERS: Frontal lobes. "Silent areas."

FUNCTIONS OF CEREBELLUM: Coordination, psychical functions, location of function.

FUNCTIONS OF MEDULLA: Respiratory and circulatory centers.

CEREBRAL TOPOGRAPHY: Fissure of Rolando, fissure of Sylvius, Horsley's method, Krönlein's method, Chiene's method.

REFERENCE BOOKS FOR THE SECOND MONTH

Keen's Surgery, vols. II and III.
Bryant and Buck: Surgery.
Ballance: Surgery of the Brain.
Horsley: Brain and Spinal Cord.
Krause: Surgery of the Brain.
Phelps: Injuries of the Brain and Its Membranes.
Starr: Brain Surgery.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

GEORGIA: Regular, Atlanta, October 10. Sec., Dr. C. T. Nolan, Marietta. Homeopathic, Atlanta, October 10. Sec., Dr. R. E. Hinman, 106½ Whitehall Street.

ILLINOIS: Coliseum Annex, Chicago, October 26-28. Sec., Dr. J. A. Egan, Springfield.

KANSAS: National Hotel, Topeka, October 10-12. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, October 19-21. Sec., Dr. A. B. Brown, 108 Baronne Street.

MICHIGAN: Legislative Bldg., Lansing, October 10-12. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSISSIPPI: State Capitol, Jackson, October 10-11. Sec., Dr. S. H. McLean.

NEW JERSEY: The State Capitol, Trenton, October 17-18. Sec., Dr. H. G. Norton, 429 E. State Street.

NEW MEXICO: The Capitol, Santa Fe, October 9-10. Sec., Dr. J. A. Massie.

OKLAHOMA: Muskogee, October 10. Sec., Dr. John W. Duke, Guthrie.

WYOMING: Riverton, October 9-11. Sec., Dr. A. B. Tonkin.

Maryland June Report

Dr. J. McPherson Scott, secretary of the Maryland Board of Medical Examiners, reports the written examination held at Baltimore, June 20, 1911. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 152, of whom 130 passed and 22 failed. Sixteen candidates were licensed through reciprocity, 1 by special examination, and 1 under the exemption clause. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University	(1908)		86
George Washington University	(1911)	75, 81, 84	
Howard University	(1910) 82; (1911)		90
Johns Hopkins University, (1901) 87; (1910) 81; (1911) 76, 78, 78, 78, 80, 80, 80, 81, 82, 83, 83, 83, 83, 83, 84, 84, 85, 85, 85, 85, 86, 87, 87, 87, 87, 88, 88, 88, 89, 91, 91, 91, 91, 91.			
University of Maryland, (1904) 75; (1909) 76, 76, 78, 82, 83; (1910) 83; (1911) 75, 76, 76, 77, 77, 77, 79, 80, 80, 81, 81, 82, 83, 84, 84, 85, 85, 85, 86, 86, 86, 87, 87, 88, 89, 90, 91.			
Baltimore Medical College, (1910) 81; (1911) 77, 83, 83, 85, 85, 86, 86, 86, 87, 87, 89, 89, 91.			
Maryland Medical College, (1909) 75; (1911) 80, 81, 83, 84, 86			
College of Physicians and Surgeons, Baltimore, (1911) 81, 81, 83, 83, 84, 85, 85, 86, 86.			
Jefferson Medical College, (1906) 82; (1910) 91; (1911) 78, 82, 84, 85, 87, 89.			
University of Pennsylvania	(1910) 80, 87; (1911)		80, 83
Woman's Medical College of Pennsylvania, (1911) 78, 79, 79, 82, 83, 84, 86, 87, 90, 91.			
Medico-Chirurgical College, Philadelphia	(1911)		75
Temple University, Philadelphia	(1911)		81, 88

FAILED

Medical College of Georgia	(1909)*	
Coll. of Phys. and Surgs., Baltimore	(1910) 73; (1911)	73
University of Maryland	(1905) 69; (1910)* (1911)	72, 73
Johns Hopkins University	(1911)	71, 72
Maryland Medical College, (1907)* (1910)* (1910) 35, 41, 57; (1911) 52, 65, 70, 73, 74.		
Woman's Medical College of Baltimore	(1904)	69
Medico-Chirurgical College, Philadelphia	(1905)	73
University of Pennsylvania	(1910)	72

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Kentucky School of Med., (1893) Dist. Colum.;	(1894)	Kentucky
Johns Hopkins University	(1910)	N. Carolina
Maryland Med. Coll., (1902) (1903) (1905) (1908)	(1909)	W. Virginia
University of Maryland, (1905) Delaware;	(1907)	W. Virginia
College of Physicians and Surgeons, Baltimore,	(1907)	W. Virginia
Baltimore Medical College	(1897)	Vermont
University of Michigan, Dept. of Med. and Surg.	(1886)	Michigan
Leonard Medical School	(1908)	Georgia
University of Pennsylvania	(1910)	Maine
University of Zurich, Switzerland	(1892)	Illinois

LICENSED BY SPECIAL EXAMINATION AND UNDER EXEMPTION CLAUSE

College	Year of Grad.
College of Physicians and Surgeons, Baltimore	(1886)
University of Palermo, Italy	(1909)

* Reexamined.

The questions asked were as follows:

ANATOMY

1. Name varieties of cartilage. 2. Describe briefly two varieties named. 3. Describe the clavicle. 4. Describe the hip joint. 5. What arteries supply the heart with blood and where do they originate? 6. Give general description of testicles. 7. Describe the pericardium. 8. What are the parathyroid bodies? 9. Name the twelve pairs of cranial nerves. 10. Name principal muscles of the back.

PATHOLOGY

1. Mention a cause for each of the following conditions: edema of one leg, edema of both legs, edema of one arm, ascites, edema of the lungs, hydrothorax. 2. What is meant by the term compensation as used in heart diseases? By broken compensation? Trace the course of events depending on the latter condition. 3. Mention at least five diseases that are transmitted by insects. Name the carriers and the method by which the infection is introduced. 4. What is a cyst? Mention two forms of cyst that are commonly met with, and explain their causation. What is meant by the term encysted? 5. Describe briefly the gross and microscopic appearances of an atrophic cirrhotic liver. Mention the pathologic changes inherent to this condition. 6. Describe the formation of scar tissue and mention its principal characteristics. 7. What is the Widal reaction? 8. What is an aneurysm? Describe the formation of an aneurysm of the aorta. 9. How would you demonstrate the presence of bacteria in milk? How would you estimate the number in a cubic centimeter of milk? 10. What are the essential lesions of scarlet fever? What means would you use to prevent the spreading of the contagion in this disease?

CHEMISTRY

1. Explain the following terms: (a) Molecular weight, (b) precipitate, (c) valence, (d) oxidation, (e) efflorescence. 2. Give the general characteristics of acids. Define monobasic, dibasic and tribasic acid, and give an example of each. 3. Give the chemical names and composition of "calomel" and "corrosive sublimate." How may one be distinguished from the other? 4. Give one chemical antidote for each of the following: (a) Nitric acid, (b) oxalic acid, (c) arsenic trioxid, (d) morphine sulphate. 5. Give (a) one chemical test for albumin in urine, and (b) one test for sugar in urine. 6. What is the normal reaction to litmus paper of (a) blood, (b) saliva, (c) succus gastricus, (d) succus entericus, and (e) feces. 7. Give the chemical formula of each of the following: (a) Sulphuric acid, (b) hydrochloric acid, (c) potassium permanganate, (d) epsom salt, (e) ammonia water. 8. Define (a) amphoteric reaction, (b) calorie, (c) indicanuria, (d) hypoacidity, (e) hyperacidity. 9. Give the chemical formula and properties of hydrogen peroxid. 10. Complete the following equations: $Na_2CO_3 + HCl =$ $K + H_2O =$ $CO_2 + Ca(OH)_2 =$ $Mg + H_2SO_4 =$ $CuO + 2HNO_3 =$

PHYSIOLOGY

1. Name and locate the glands of the small intestines. 2. (a) Describe the normal pulse, its variations in infancy, youth and old age; (b) How does the pulse rate compare with respiration? 3. Where in the body is each of the following found and what the function of each: pepsin, trypsin, glycogen, ptyalin and synovia? 4. What is meant by the vasomotor nervous system? 5. What is meant by blood-pressure and how estimated? (b) What are some

of the causes altering blood-pressure? (c) How does the weight of the entire amount of blood in the body compare with the weight of the body? 6. Give functions of spinal cord. 7. What is accomplished physiologically by the portal circulation? 8. Describe briefly the functions of the pneumogastric nerve. 9. Through what three main channels is water lost from the body? 10. Describe the effect of strychnin on the central nervous system.

THERAPEUTICS

1. Define chemical incompatibility. Give three illustrations and write a prescription showing it. 2. Define pharmaceutical incompatibility. Give three illustrations and write a prescription showing it. 3. Give physiologic action of gionoinum and indications for its use. 4. Describe the indications for use of carbohydrates. Illustrate their use and name six. 5. Give the therapeutics of arsenous acid; symptoms of arsenical poisoning and antidote. 6. Give the therapeutics of acid hydrocyanic4 manifestation of poisoning and antidote. 7. Write a prescription in Latin, without abbreviations, containing four liquid ingredients; state conditions for which it is intended and give directions for its use. 8. Write a prescription in Latin, without abbreviations, containing three ingredients in powder; state conditions for which it is intended and give directions for its use. 9. State briefly the therapeutics of nux vomica. 10. State briefly the therapeutics of thyroid extract and adrenal extract.

MATERIA MEDICA

1. (a) Plumbum—give five preparations. (b) The treatment in case of poisoning. 2. (a) Codein, heroin, dionin, and peronin—from what prepared? Dose of each. (b) To what class of drugs do chloral hydrate, sulphonal, trional, veronal and the bromids belong? Average dose of each. 3. (a) Define tinctures and extracts. (b) What is meant by incompatibility in medicines? Name some incompatibles. 4. Write a prescription containing in pill form iron, quinin, arsenic and strychnin, using the official terms in full. 5. To what class of drugs do camphor, asafetida, valerian, compound spirits of ether, musk and viburnum prunifolium belong? Give the average dose of each. 6. To what class of drugs do acetanilid, antipyrin, phenacetin, quinin, aconite, guaiacol belong. The average dose of each. 7. (a) Name five vegetable astringents. (b) Name five mineral astringents. (c) Name three diuretics. (d) What are expectorants and into what two classes are they divided. Name some of each. 8. Give the composition of black wash, brown mixture and compound cathartic pill. 9. Write a prescription for a child five years old, containing paregoric, subnitrate of bismuth, prepared chalk, using in full the official names. 10. Define materia medica. What is meant by U. S. Pharmacopeia?

PRACTICE

1. Define (a) Kernig's sign, (b) tachycardia, (c) cholecystitis, (d) myxedema, (e) urticaria. 2. Define (a) Grocco's sign, (b) tabes dorsalis, (c) herpes zoster, (d) rubella, (e) hydronephrosis. 3. Differentiate variola and varicella. 4. Cancer and ulcer of the stomach. 5. Spasmodic and membranous croup. 6. Coma of alcohol, uremia and cerebral hemorrhage. 7. Give treatment of acute chorea. 8. Give treatment of chronic nephritis. 9. Give treatment of ulcerative stomatitis. 10. Give diagnosis and treatment of intestinal perforation in typhoid fever.

SURGERY

1. What is trachoma? Give signs and symptoms. 2. Give the definitions of toxemia, septicemia, pyemia. 3. Give strength and dose of solution of cocain for local anesthesia, its indications and dangers. 4. Name the general anesthetics employed in surgical cases. 5. Surgical shock: Give physiology, etiology, symptoms, diagnosis and treatment. 6. Describe a simple manner of testing the hearing and its expression by fractional formula. 7. Give the differential diagnosis between chronic appendicitis and gall-stones. 8. Name some causes, symptoms and treatment of caries. 9. Give the secondary symptoms of acquired syphilis. 10. Describe the operation of thoracotomy (resection of rib) and give the indications for the same.

OBSTETRICS

1. Describe the pelvis joints and their relation to labor and delivery. 3. What is a corpus luteum? 3. What is the cause of hyperemesis gravidarum and the clinical features and the treatment of the condition? 4. Describe in detail the symptoms of extra-uterine pregnancy. 5. Give the diagnosis and management of a breech presentation. What are the dangers to the child? 6. Describe the application of forceps to the fetal head. 7. How would you manage a case of primary post-partum hemorrhage? 8. How would you treat a case of complete prompsus uteri? 9. Give the treatment of mastitis. 10. Opathalmia neonatorum. Give prophylaxis and treatment.

Georgia May Report

Dr. C. T. Nolan, secretary of the Regular Board of Medical Examiners of Georgia, reports the written examinations held at Atlanta and Augusta, May 2-5, 1911. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 80. At the examination held at Atlanta, the total number of candidates examined was 109, of whom 99 passed and 10 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College		(1909)	91
University of Alabama		(1910)	94
Atlanta College of Physicians and Surgeons,	(1909) 85.5; (1911) 80, 80, 80, 81.5, 82, 83, 83, 83, 83, 83, 83, 83.5, 83.5, 83.5, 84, 84, 84.5, 84.5, 84.5, 84.5, 85, 85, 85, 85.5, 86, 86, 86, 86, 86.5, 86.5, 86.5, 87, 87, 87, 88, 88, 89, 89, 89, 91, 92, 92.5.		
Atlanta School of Medicine,	(1911) 80, 80, 80, 80, 80, 81, 81, 81, 82, 82, 82.5, 83, 84.5, 85, 85, 85, 85, 85, 85, 85, 85, 85.5, 86, 86, 86, 86, 86, 86.5, 86.5, 86.5, 87, 87, 87, 87, 87.5, 88, 88, 89, 89.5, 91.		
Kentucky School of Medicine		(1908)	83
Johns Hopkins University		(1907)	87.5, 95.5
Baltimore Medical College		(1905)	84.5
University of Maryland		(1910)	88.5
College of Physicians and Surgeons, Boston		(1910)	88.5
Barnes Medical College		(1900)	80
Medical College of South Carolina		(1906)	85
University of Nashville		(1911)	91
Meharry Medical College		(1911)	80, 81, 86
Chattanooga Medical College		(1905)	89
Non-graduate*			91

FAILED

Hospital Medical College, Atlanta		(1911)**	
Atlanta School of Medicine	(1911)	76, 76, 77.5,	78.5
Atlanta College of Physicians and Surgeons		(1911)	78.5
Leonard School of Medicine		(1905)	71.5
Meharry Medical College		(1911)	78
Knoxville Medical College		(1908)	66.5
Non-graduate†			68.5

At the examination held at Augusta the total number of candidates examined was 27, of whom 23 passed and 4 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Medical College of Georgia,	(1909) 83; (1911) 81.5, 82, 83, 83.5, 83.5, 84.5, 84.5, 85, 85, 85.5, 85.5, 86.5, 87.5, 89, 89, 89.5, 90.5, 92, 92.5, 93.5, 94.		
Harvard Medical School		(1878)	83.5

FAILED

Medical College of Georgia		(1911)	75.5, 76, 76, 77

* This applicant will not obtain his license until he receives a diploma from the Atlanta School of Medicine in 1912, for which he has already qualified. He was admitted to the examination by special vote of the Board.

** Expelled from examination for cheating.

† This candidate's application indicated graduation from Meharry Medical College. Word from this school, however, states positively that he was not a graduate.

New Hampshire July Report

Mr. H. C. Morrison, regent of the New Hampshire State Board of Medical Examiners, reports the written examination held at Concord, July 6-7, 1911. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 15, of whom 13 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Medical School of Maine		(1910)	81
Baltimore Medical College		(1911)	81
Boston University		(1911)	84, 87
Tufts College Medical School	(1907) 80; (1910) 80;	(1911)	80
Harvard Medical School		(1902) 80; (1911)	80
Dartmouth Medical School		(1910) 78; (1911)	81, 83
University of Vermont		(1911)	76

FAILED

Medical School of Maine		(1877)	64
Laval University, Canada		(1911)	71

New Mexico July Report

Dr. J. A. Massie, secretary of the New Mexico State Board of Health and Medical Examiners, reports that at the meeting held by that board, July 10-11, 1911, 23 candidates were licensed on presentation of satisfactory credentials. The following colleges were represented:

College	Year of Grad.
Denver and Gross College of Medicine	(2, 1909)
Northwestern University Medical School	(1904)
University of Louisville	(1911)
University of Louisiana	(1871)
Tulane University of Louisiana	(1892) (1909)
Baltimore University	(1897) (1903)
University of Maryland	(1909)
University Medical College, Kansas City	(1906)
Missouri Medical College	(1898)
St. Louis College of Physicians and Surgeons	(1897) (2, 1911)
Jefferson Medical College	(1898)
University of Pennsylvania	(1879) (1892) (1895)
Medico-Chirurgical College, Philadelphia	(1901)
Temple University	(1910)
University of Nashville	(1902)
University of the South	(1909)

South Dakota, July Report

Dr. L. G. Hill, secretary of the South Dakota Board of Medical Examiners, reports the written examination held at Mitchell, July 12-13, 1911. The number of subjects examined

in was 13; total number of question asked, 100; percentage required to pass, 75. The total number of candidates examined was 26, of whom 24 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Rush Medical College		(1910)	3
Hahnemann Medical Coll. and Hospital, Chicago		(1909)	1
Northwestern University Med. School		(1905) (1909)	2
Coll. of P. and S., Chicago		(1909) (1910) (2, 1911)	4
Chicago Homeopathic College		(1904)	1
University of Iowa College of Medicine		(1911)	1
Drake University		(1902)	1
Univ. of Mich., Dept. of Med. and Surg.		(1910)	1
Grand Rapids Medical College		(1908)	1
University of Minnesota, College of Medicine		(1909)	2
Creighton Medical College		(1907) (2, 1910) (2, 1911)	5
University of Nebraska		(1911)	1
University of Toronto, Ontario		(1908)	1
	FAILED		
Bennett Medical College		(1911)	1
Bellevue Hospital Medical College		(1892)	1

Rhode Island July Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, July 6-7, 1911. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 12, of whom 8 passed and 4 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Medical School of Maine		(1911)	93
College of Physicians and Surgeons, Baltimore		(1911)	88.1
Baltimore Medical College		(1909)	83.4
Harvard Medical School		(1910) 89.9; (1911) 81.1, 87.4, 92.4	
Long Island College Hospital		(1911)	84.2
	FAILED		
University of Maryland		(1911)	75.7
Tufts College Medical School		(1911)	77.4
University of Vermont		(1910)	75.6
Laval University, Quebec		(1911)	68.6

Vermont July Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Examiners, reports the written examination held at Burlington, July 11-13, 1911. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 41, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Gross Medical College		(1902)	77.9
Harvard Medical School		(1898)	76.3
Tufts College Medical School		(1910)	79.1
Eclectic Medical College of New York		(1911) 78.6, 82.6	
Columbia University, Coll. of P. and S.		(1911)	85
University of Pennsylvania		(1910)	83.8
University of Vermont		(1900) 55.5* (1908) 81.8; (1909) 77.1, 78.5; (1910) 78.6, 83.8, 86.5, 92.6; (1911) 76.9, 78.4, 77.6, 78.7, 80.3, 81.8, 82.1, 82.2, 82.6, 83.1, 83.1, 83.2, 83.4, 83.8, 83.9, 84.7, 85.2, 86.1, 87.6, 87.8, 88.2, 88.3, 88.5, 88.7, 92.3.	
University of Rome, Italy		(1898)	79.4

* By vote of board, a certificate was issued to this candidate for reasons satisfactory to the board.

Corrections in State Board Reports

Dr. G. M. Williamson, secretary of the North Dakota State Board of Medical Examiners, informs us that the graduate of the Keokuk Medical College, College of Physicians and Surgeons, 1906, examined July 5-7, 1911, received an average of 84.2 per cent. instead of 80 per cent. as was previously reported.

Correspondence from Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, indicates that one of the candidates who failed at the examination held by that board, June 5-7, 1911, was a graduate of the Maryland Medical College, 1908, instead of the Baltimore Medical College as was previously reported.

The two reports referred to were published in THE JOURNAL, Sept. 16, 1911, on pages 1001 and 1002.

Book Notices

A SYSTEM OF MEDICINE. By Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., Regius Professor of Physic in the University of Cambridge and Humphry Davy Rolleston, M.A., M.D., F.R.C.P., Senior Physician, St. George's Hospital, Cambridge. Volume VIII, Diseases of the Brain and Mental Diseases. Pp. 1070, with illustrations. Volume IX. Diseases of the Skin With General Index. Pp. 869, with 170 illustrations. Cloth. Price, $6 net per volume. New York: Macmillan & Co., 1911.

In preparing the various volumes in this system, it has been the aim of the authors to publish one volume each year. In the main, this scheme has been carried out as planned, although on two occasions, two volumes have appeared in the same year. Volume I appeared in 1905 and the succeeding volumes have been published at intervals since, and were reviewed in THE JOURNAL. While this method of publishing may not appeal to some readers, it nevertheless possesses some advantages in that it is primarily historical. Each volume is complete up to the time of publication. It is not necessary at this time to mention the good features of the previous volumes of this work, but it may not be amiss to emphasize the value of the many references to current literature appended to each article. American works on medicine are woefully deficient in this respect.

Volume VIII, now before us, is devoted to the diseases of the brain and mental diseases. In the first edition the eighth volume also contained a discussion of the diseases of the skin, which are considered in Volume IX of the new edition. The most notable change in this portion of the work has been made in the chapter on meningitis, to which 66 pages are devoted. The author has not failed to include every known type, even that accompanying rheumatism and mumps. The same author contributes a very excellent article on acute polio-encephalitis, in which he subscribes to the current views held as to the etiology of the disease. Other new chapters are those on "Recurrent Paralysis," by J. Mitchell Clarke, and "Apraxia and Agnosia," by J. Collier. Naturally, many chapters have been revised or rewritten to keep pace with the great progress which has been made in neuriatry. Neither Freud nor psycho-analysis is mentioned. Mackenzie in his article on "Migraine" does not agree with Gould in his refraction error theory. He regards the disease as hereditary. A most commendable chapter is the one by Nicolson on "Criminal Lunacy." It bristles with valuable and instructive statistics and from every point of view is one of the best contributions on this subject. A short chapter on insanity and surgical operations by Dent presents this topic well.

Volume IX, the concluding volume, contains 750 pages on the "Diseases of the Skin" and the general index. The text is further elucidated by 170 illustrations and 2 plates, but unfortunately black-and-white pictures are of little value to depict skin lesions. Among the contributors to this volume are H. G. Adamson, H. R. Crocker, T. C. Fox, J. Galloway, J. Hutchinson, J. M. H. MacLeod and J. H. Sequeira. A very comprehensive chapter on the bacteriology of the skin introduces the subject of dermatology, which is presented clearly, fully and instructively. Each chapter is essentially a review of what is known to-day and the references cited at the end of each part are exceedingly valuable, giving the reader an opportunity to search further, if he so desires. Many chapters have been entirely rewritten, as for instance, the chapters on eczema, tumors, tuberculosis and pruritus. New ones have been added on such subjects as blastomycosis, sporotrichosis and calcareous deposits. On cursory examination, a most favorable impression is conveyed as to the scope and thoroughness of the work. Differences of opinion are not subject to review.

TUBERCULOSIS HOSPITAL AND SANATORIUM CONSTRUCTION. Written for the National Association for the Study and Prevention of Tuberculosis. By Thomas Spees Carrington, M.D., Assistant Secretary. Paper. Pp. 164. New York: 105 East 22d Street, 1911.

This book should be of assistance to those building sanatoriums, or to those adapting cottages for the use of the tuberculous. Excellent illustrations are given and detailed plans with measurements and descriptions, taking up various styles of architecture from simple to complex. Many of the well-known institutions of the country are here diagrammed.

Medicolegal

Liability of Company for Medical Services Rendered to Injured Employee on President's Promise of Payment

(Scott vs. Monte Cristo Oil & Development Co. (Cal.), 115 Pac. R. 64)

The Court of Appeal, Second District, California, affirms a judgment in favor of a physician for professional services rendered and medicines furnished to an employee of the defendant company, who had been seriously injured, his skull being fractured, necessitating an operation of trephining. The plaintiff had been called by telephone and later told by the president of the company, in the presence of the superintendent, that the company would pay the bills; but the company contended that the evidence failed to show any authority, either express or implied, on the part of the president or superintendent of the corporation to act for it in making such agreement or incuring such liability.

No question of *ultra vires* or the corporation's having exceeded its charter powers, the court says, was involved. The superintendent received his orders and instructions on behalf of the corporation from its president, who instructed him to do all that he could for the boy. There was also evidence to the effect that the plaintiff, after dressing the employee's wounds at the bunkhouse, asked whether they would send him to the hospital as a county charge, or to the private sanatorium, where the hospital charges would be $25 per week.

If the injury to the employee was due to the negligence of the corporation, then, in the absence of contributory negligence on his part, the corporation would be liable to him for these claims and he might recover therefor. Such circumstances would constitute a sufficient consideration for the making of the agreement and raise a presumption that it was in the interest of the corporation to do what it could to reduce its liability for damages on account of such injury.

It could not be said that an agreement of this character, made under such conditions, would not be within the scope of authority vested in one charged with the general power shown to have been exercised by the president of the corporation. The directors did not meet in that county, all of its business there was transacted through its president, and, since he was held out by the corporation as possessing full power to act in its behalf in all matters arising and transacted in that vicinity, then, in the absence of anything to the contrary, the evidence was sufficient to raise a presumption that he was vested with the authority which he purported to exercise in making the agreement. Under the circumstances disclosed by the record, the court deems it but a reasonable inference to conclude that the making of this agreement by the president as such was within the scope of the powers vested in him by the corporation.

Moreover, conceding that the company was not responsible for the injuries received by the employee, and might have refused to assist or care for him in any way, nevertheless it recognized an obligation to do something toward relieving his suffering and assisting him, and did send him to the sanatorium and paid for the services rendered in such transportation, which, however small, constituted some ratification of the acts of its president.

The case was not unlike that of Fraser vs. San Francisco Bridge Company, 103 Cal. 79, where it was held under the circumstances of that case that the moral obligation resting on the defendant to furnish assistance and care to an injured employee, for which the corporation was in no wise responsible, constituted a sufficient consideration for the agreement made by the president of the company to pay a physician for professional services rendered such employee.

The finding in this case to the effect that the injury was received by the employee while performing the duties of his employment found no support in the evidence; but, under the court's view of the case, the error was not prejudicial and should be disregarded as immaterial.

Admissibility of Testimony in Case of Examination of Patient Through Interpreter

(Salminen vs. Ross (U. S.), 185 Fed. R. 997)

A United States Circuit Court, in Massachusetts, holds that in a personal injury case the testimony of a physician who examined the plaintiff through a companion who acted as an interpreter for the physician was not objectionable as mere hearsay, where, so far as the testimony of the physician included subjective symptoms and a history of the case communicated to him through the interpreter, that was merely testimony given by the physician as the reason for his conclusion, and the testimony was not admitted to prove the truth of the statement, but only to form the basis for an expert opinion. Whether the statements were derived directly from the patient or indirectly through an interpreter, they were insufficient to show the plaintiff's condition as a matter of fact.

Liability for Death Made Possible by Prior Surgical Operation

(Louisville & Nashville Railroad Co. vs. Chamblee (Ala.), 54 So. R. 681.)

The Supreme Court of Alabama, in affirming a judgment against the railroad company for damages for the death of a man from strangulation of the bowels, says that there was evidence tending to show that the handling of the man by the company's watchman caused the parting of the casing of the bowels at a place or places where previously a surgical operation had been performed. If the violent treatment alleged to have been received by the man had the effect to cause his death, or accelerate his dissolution as a consequence of the earlier surgical operation, the company, if shown otherwise to be liable, could not claim exemption from the result of its employee's (watchman's) acts in the course of his service to it.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

September

1 *Is There Specific Treatment for Diabetes Mellitus? H. Sewall, Denver.
2 *Passing Leakage of Pulmonary Valve. R. D. Rudolf, Toronto, Canada.
3 *Auscultatory Method of Determining Blood-Pressure. E. H. Goodman and A. A. Hewell, Philadelphia.
4 *Diffuse Selective Sclerosis of Superficial Veins. H. Brooks, New York.
5 Retrobulbar Neuritis as Exact Diagnostic Sign of Certain Tumors and Abscesses in Frontal Lobes. F. Kennedy, New York.
6 Surgical Treatment of Nephritis. M. B. Miller, Philadelphia.
7 *Quantitative Determination of Functional Renal Sufficiency by Dubosco Colorimeter; Indigocarmin vs. Phenol-Sulphonephthalein. B. A. Thomas, Philadelphia.
8 *Actinomycosis in Norway: Etiology, Modes of Infection and Treatment. F. Harbitz and N. B. Grondahl.
9 *Embryos of Trichinella Spiralis in Blood of Patients Suffering from Trichiniasis. A. R. Lamb, New York.
10 *Bacterin Treatment of Septic Rhinitis of Scarlet Fever; Report of One Hundred Cases. J. A. Kolmer, Philadelphia, and P. G. Weston, Warren, Pa.
11 *Chronic Pneumonia (Including Two Cases of Syphilis of the Lung). L. S. Milne, New York.

1. Abstracted in THE JOURNAL, June 17, 1911, p. 1849.

2. **Passing Leakage of Pulmonary Valve.**—Three cases are reported by Rudolf in which an evident mitral lesion so raised the pulmonary artery blood-pressure that that vessel and along with it the pulmonary orifice dilated and a murmur occurred, which came and went in two of them over a period of years. These three cases are examples of the so-called Graham Steell murmur. In two other cases cited no such cause seemed to exist, and probably the leakage was more due to relaxed tissues about the pulmonary orifice than to any marked increase in the blood-pressure of the pulmonary artery. A pulmonary systolic murmur, the commonest of all functional bruits, probably depends on a dilatation of the pulmonary artery, and in most cases tends to disappear. When, however, the dilatation involves the pul-

monary orifice so that a diastolic leakage occurs the condition is of more import, although even yet it may completely clear up. From the dilatable character of the pulmonary orifice, and on the other hand the resistant nature of the aortic one, Rudolf regards it as probable that most of the diastolic murmurs which come and go, and which are usually reported to be aortic in origin, are due to passing leakage at the pulmonary valve.

3. **Determining Blood-Pressure.**—Special attention was given by Goodman and Howell to sequence readings and to their interpretation, and it is to this aspect alone that the present paper is dedicated. They interpret variations in sequence readings by assuming that each phase has a physiologic factor in its production in addition to the anatomic unit, and though these hypotheses have not the firm basis of an experimental control, yet clinical experience has lent some weight to their probable correctness. The first phase, or tone phase, serves principally as an index as to how far the pressure must fall before the blood-current can be sustained past the obstruction in the vessel caused by the cuff, at a sufficient velocity and for a sufficient duration to produce the murmur. Hence the information it affords is of negative rather than of positive value. In other words, its normal duration is of no value, but an increase or decrease in length is of importance. The second, or the murmur-phase, seems to be especially dependent on cardiac effectiveness, for it is in this phase alone that the individual sounds possess a distinct element of duration, and this protracted energy, for so it must be regarded, must evidently come from the heart. The third phase, or second tone phase, depends not alone on cardiac efficiency, but also on the character of the vessel wall. The more sclerotic the vessel and the greater the cardiac hypertrophy, the more favorable are the conditions for the production of a clear tone. As the fourth phase, or dull tone, may be produced by a resilient vessel receiving a normal pulse shock, or by a rigid vessel receiving a weakened shock, its interpretation is more difficult, but its study quite as interesting.

If these assumptions are correct, it is quite evident that increases in the second and third phases are dependent on cardiac strength and circulatory efficiency, while the first and the fourth phases suffer increase when there is cardiac weakness. Furthermore, in dealing with increases or decreases in any particular phase, it is important to know at the expense of what adjacent phase this has occurred. It is apparent that an increase in the third phase, for example, at the expense of the second, has not the same significance as an increase of this phase at the expense of the fourth. In the first instance the unit of cardiac strength, obtained by adding the lengths of the second and third phases, has not been materially changed, while in the latter it has been increased. For this reason the authors recommend that the sum of the second and third phases be compared with the sum of the first and fourth phases, in order to determine whether the elements of force or those of weakness are predominating.

4. **Sclerosis of Superficial Veins.**—The chief features presented by Brooks' case were, a diffuse, isolated sclerosis of the superficial veins of the inner side of the thigh with phlebitis and thrombosis of one. This condition is remarkable in that the sclerosis was apparently limited to the superficial veins, and was relatively much more marked in them than in the other veins or arteries. Although the coagulation time of the blood was considerably reduced the chief factor back of it was the markedly altered, and in this instance clearly sclerotic alteration in the walls of the veins. With no other evidence at hand, and the case was most carefully studied in all its aspects, Brooks believes that this selective venous sclerosis was induced by syphilitic infection either congenital or early contracted.

7. **Functional Renal Sufficiency.**—Quantitative colorimetric determinations of indigocarmin and phenolsulphonephthalein Thomas believes are of very great value in the estimation of the total renal function, particularly in such conditions as nephritis and damaged kidneys, incident to prostatic enlargement, etc., causing poor drainage and resulting in vis a tergo pressure. These substances routinely employed by the surgeon as indicators for or against surgical intervention, particularly in contemplated prostatectomies, but likewise in other fields of surgery, will aid materially in the reduction of operative mortality. Although, he says, each substance has its particular advantages and indications as a test, indigocarmin, at least for the purposes of the surgeon, especially in the diagnosis and prognosis of unilateral renal disease, seems just as useful and possibly more practical than the new drug phenolsulphonephthalein. Phenolsulphonephthalein in many respects is an ideal substance for employment in studying the pathology and physiology of the kidney. It may possibly be more sensitive than indigocarmin, in fact, may prove to be too delicate. On the other hand, the technic of the test is extremely simple and may be employed painlessly. Preference should be extended to this drug over indigocarmin whenever it is desirable to learn the total or combined efficiency of both kidneys.

8. **Actinomycosis in Norway.**—The authors' series includes 87 cases, and the lesions were distributed as follows: 45 per cent. of the cases occurred on the neck and face (all cured); 23 per cent. in the thorax (all dead); 30 per cent. in the abdomen (19 dead, 5 cured); 3 per cent. on the skin (1 dead, 1 cured). Fifty-six cases occurred in men, 27 in women, and in 7 the sex was not given. Two occurred in the first decade (boys); 12 occurred in the second decade (10 men, 2 women); 26 occurred in the third decade (17 men, 9 women); 16 occurred in the fourth decade (10 men, 6 women); 13 occurred in the fifth decade (8 men, 5 women); 7 occurred in the sixth decade (4 men, 3 women); 3 occurred in the eighth decade (3 men). Among the 39 cervico-facial cases, in 15 the lesions were located on the cheek, especially on the maxilla, the forehead and the parotid region; in 20 they were on the mandibular or on the submental region and in 3 they were located farther down the neck, and 1 tumor was on the tongue. The infection atrium was in every instance the mucous membrane of the oral cavity, and often the part covering the gums. There was no evidence of the fungi having entered by carious teeth. All the 39 patients recovered.

In the thoracic group the primary lesion was always in the lungs, and, as a rule, in the lower lobes. The disease simulated an atypical bronchopneumonia or pulmonary tuberculosis, with fever, dyspnea, cough and a rusty, tenacious sputum, which, as a rule, contained the characteristic sulphur granules. Everyone of these cases terminated fatally. The average duration was one to one and one-half years. One patient lived on for eight years. The primary lesion of the abdominal cases was some part of the alimentary tract, most often the vermiform appendix. There were no primary lesions in the rectum, bladder or genital organs, although gravitation abscesses did extend into these organs. The disease occurred as localized abscesses most often in the ileo-cecal region. These spread both extra- and intra-peritoneally. Liver abscesses were frequently found. The average duration of the fatal cases was one to two years. In the 2 patients where the disease was primary in the skin, 1 had a localized abscess on the arm which soon healed. The other had a phlegmonous infection of the leg, that originated from an ulcer that started during the harvest. This man's leg was amputated, but he died.

9. **Embryos of Trichinella Spiralis in Blood.**—The examination of the blood sediment for the embryos of *Trichinella spiralis* suggesting trichiniasis. The earliest time at which the Lamb believes to be a valuable means of diagnosis in cases embryos may be found in the blood is on the sixth or seventh day after infection. The latest date is not so accurately fixed. While the parasites have not been found later than the twenty-seventh day after infection in guinea-pigs, or later than the twenty-second day after the onset of symptoms in man, there is some ground for the belief that they may occasionally be recovered in the fifth or possibly the sixth week after injection. Lamb has found this method of greatest value in those cases where the diagnosis is doubtful and especially where the patient refuses permission to excise a piece of muscle or where the muscle findings are negative.

10. **Septic Rhinitis of Scarlet Fever.**—Kolmer and Weston regard the nasal discharges as of primary importance in the etiology of the return case of scarlet fever, because the true rhinitis of scarlet fever is septic in character, distinctly infectious in itself, and probably harbors the contagium of scarlet fever. They found the bacterin treatment of cases of septic rhinitis to be more satisfactory than the usual treatment. It shortens materially the time required for cure and decidedly aids in decreasing the number of return cases.

11. **Chronic Pneumonia.**—A very exhaustive study of ten cases of chronic pneumonia leads Milne to conclude, (1) that they are a possible sequence of acute pneumonia; (2) that they are particularly found in subjects debilitated by some intercurrent condition, but that no single factor such as cardiac conditions, nephritis, arteriosclerosis, alcoholism, tuberculosis or syphilis is responsible for its production. The onset is extremely irregular in type, and may be acutely febrile, simulating the usual commencement of a croupous pneumonia in subjects of the same age or typical signs of pneumonic consolidation may be evident without there having been any especial initial pneumonic symptoms or there may even be no increase in temperature or abnormality of the pulse and respiration rates. The prognosis in such conditions is bad, as not only is death very frequent from cardiac insufficiency, but complications, such as empyema, pericarditis, peritonitis, meningitis, etc., are extremely frequent, and what is very important that any of these conditions may supervene even after long periods of apparent quiescence of the pneumonia—seven out of the ten cases were complicated in this way, an infinitely higher proportion than occurred in the rest of the pneumonia series; forty-one out of ninety-five cases of lobar pneumonia, including nine which had become organized, and ten out of sixty-four cases of bronchopneumonia, including one which was organized, were complicated. Such conditions, Milne believes, may undoubtedly be recovered from as far as symptoms are concerned, yet maintaining physical signs of pneumonic consolidation. It is just such cases which are apt to be mistaken for tuberculosis or possibly syphilitic fibrosis. In this connection it is also possible that the development of bronchiectasis or subsequent tuberculous infection may further complicate the case. Collapse, tubercle, infarction and syphilis of the lung, etc., are distinguishable from chronic pneumonia. Once organization processes in the lung have advanced to any marked extent one cannot imagine any complete restoration, as some cicatrization must be permanent.

Louisville Monthly Journal of Medicine and Surgery

September

12 Head Injuries: Report of Cases. A. M. Vance, Louisville.
13 Physician Twenty-Five Years Ago and Now. C. W. Kavanaugh, Lawrenceburg, Ky.
14 Arsenic in Malaria. R. Powell, St. Louis, Mo.
15 European Travel Notes. A. Schaechner, Louisville, Ky.
16 Postoperative Hernia with Resection of Intestine. L. Frank, Louisville.
17 Cesarean Section by High Incision. Pylorectomy: Report of Cases. L. Frank, Louisville.
18 Gunshot Wound of Arm. Sarcoma of Kidney: Report of Cases. W. O. Roberts, Louisville.
19 Tuberculosis of Kidney. B. C. Frazier, Louisville.
20 Importance of Certified or Pasteurized Butter. A. F. Hess, New York.

Virginia Medical Semi-Monthly, Richmond

September

21 Visceroptosis. J. N. Baker, Montgomery, Ala.
22 Rôle of Tonsils in Systemic Disease. H. T. Aynesworth, Waco, Texas.
23 Diagnosis of Incipient Tuberculosis. J. J. Lloyd, Lynchburg, Va.
24 Local Treatment of Gonorrheic Infections. M. C. Sycle, Richmond.
25 Indications for Gastro-Enterostomy. D. W. Prentiss, Washington, D. C.
26 Some Common Errors in Operative Technic. R. P. Bell, Staunton, Va.
27 *Stab Wound of Heart, Drainage of Pericardium, Recovery. H. S. Lott, Winston-Salem, N. C.

27. **Stab Wound of Heart.**—In the case cited by Lott the wound was found to be about midway on a line drawn just a little upward from the left nipple to the sternum. A free incision was made, exposing the fourth costal cartilage, which had been cut through transversely, the knife having entered the structures beyond, and in such direction as to indicate some injury to the heart. On the removal of this cartilage in two sections and the introduction of the fingers into the wound, blood-clots were found, as also a ragged puncture through pleura, lung structure, pericardium and into the heart muscle, for a depth quite sufficient to be easily perceptible to the touch, although not penetrating into its cavity, and situated at a point in the upper third of the ventricle quite near to the line of division between this and the auricular cavity. The wound in the muscular wall of the heart was not of such depth as to justify closure with stitches; nor did Lott feel inclined to close the pericardium and other supervening structures, thus making a sealed wound. But considering the infected weapon, the deep puncture and the unavoidable trauma from blood-clots and manipulation, he determined to drain both pericardial and pleural cavities. In order to accomplish this, two pieces of rubber tubing were used, each one of them split open on one side for its entire length, and its lumen filled with a soft gauze wick. One of these tubes, the longer one, was passed through the rent in the pericardium and well down to the limit of the apex of the heart; and the other one, not quite so long, through the rent in the pleura and lung tissue and well down into the pleural cavity, posteriorly. These were fixed in the usual manner with safety pins, and an ample gauze and cotton dressing made secure with a many-tailed bandage. Hypodermics of morphia were given to relieve pain and secure quiet, and during this first forty-eight hours the clinical picture was a most interesting one. The heart was very erratic, the pulse going all gaits, ranging from 100 to 140. After forty-eight hours the tubes were drawn up for about 1 inch and cut off, and this was continued each day until they were out of the cavities. Drainage during this time was very free. The dressings were not disturbed. This drainage lessened each day, and by the time that the tube was withdrawn from the pericardial cavity, had practically ceased, and from that source there was no further trouble. The heart's action became more regular, but its rate was accelerated, ranging throughout this time from 100 to 112; and finally, when he left the hospital about five weeks from the time of his entrance, the range of the pulse was from 80 to 90 in the twenty-four hours.

Buffalo Medical Journal

September

28 Conservative Ophthalmology. F. P. Lewis, Buffalo.
29 Three Years with Army of Potomac. W. W. Potter, Buffalo.
30 Heterophoria Superstition. G. M. Gould, Ithaca, N. Y.

Journal of Cutaneous Diseases, New York

September

31 *Dermatitis Vegetans in Infants. G. W. Wende and H. K. De Groat, Buffalo.
32 Differential Study of Multiple Benign Cystic Epithelioma and Adenoma Sebaceum in the Negro. R. L. Sutton, Kansas City.

31. **Dermatitis Vegetans in Infants.**—The authors emphasize the occurrence in infancy of a clinically well-defined and charactersitic group of cases of dermatitis vegetans. They report four cases and review six others. All occurred in healthy infants under 1 year of age. Six developed in the course of eczema and four independently of any other dermatosis. In six patients the lesions were limited to the face with the exception of a few scattered lesions on the scalp; in the other four, the wrists, arms and legs were involved. The initial lesion was a papulo-pustule. The pustule soon dried up or ruptured and discharged its contents, and on the reddened base there developed the characteristic secondary lesion of the disease. This consisted of vegetating masses varying from split-pea to walnut size or larger, and elevated from ¼ to 1 inch above the skin surface. Some of the lesions developed from the base of a single pustule, others by the coalescence of several. The individual lesions often contained miliary pustules, especially near their borders, exuded a purulent fluid on pressure, and when the crusts or scales covering them were removed presented a warty appearance. There was no constitutional reaction and disturbance of sensation was apparently very slight. A gratifying feature was the benign course of the disease, all cases yielding to antiseptic treatment in from two to eight weeks.

Medical Fortnightly, St. Louis

September 11

33 Emergency Surgery. G. W. Broome, St. Louis.
34 In the Twilight. C. E. Warren, North Easton, Mass.
35 Intestinal Lesions Caused by Abdominal Contusions. Enderlen, Wurzburg, Germany.

New Orleans Medical and Surgical Journal

September

36 *Etiology of Pellagra. C. Thorington, Montgomery, Ala.
37 Three Cases of Animal Parasites in Urine. W. Krauss, Memphis, Tenn.
38 Salvarsan and Syphilis. G. J. Winthrop and H. P. Cole, Mobile, Ala.
39 *Lingual Tonsil. H. Dupuy, New Orleans.
40 Large Submucous Fibromyoma Complicating Pregnancy: Report of Case. C. W. Groetsch, New Orleans.
41 Complete Prolapse of Funis, Treatment. A. C. King, New Orleans.
42 Relative Immunity of Negro to Alcoholism. G. F. Patton, New Orleans.

36. **Etiology of Pellagra.**—Thorington suggests the mosquito as a probable factor in the conveyance of pellagra and points to the similarity in symptoms between pellagra and malaria.

39. **Lingual Tonsil.**—Dupuy emphasizes that there is such a structure as the lingual tonsil, which, while a diminutive lymphoid deposit, is quite frequently the source of considerable distress, and that proper remedial measures afford the most gratifying relief. The enlargement of the lingual tonsil is seldom of sufficient dimensions to make it feasible for excision, and the profuse, and perhaps dangerous, bleeding renders it inadvisable to resort to a cutting operation as a routine measure. The galvano-cautery, properly applied, will reduce the ordinary hypertrophies, and is equally effective in destroying the lingual varix. In the acute and subacute inflammations, the silver salts, iodized phenol and menthol, in spray form, are of undoubted efficiency.

Denver Medical Times and Utah Medical Journal

September

43 Pleurisy and Tuberculosis. W. F. Waugh, Chicago.
44 Cancer of Penis. Schools of Instruction for Sanitarians. W. P. Munn.
45 *Aseptic Hospital Floor. C. J. Fox, Washington, D. C.
46 Utah's Water-Supply. F. E. Clark, Logan, Utah.
47 The Crime of Love. G. H. Bogart, Terre Haute, Ind.

45. **Aseptic Hospital Floor.**—Fox says that, perhaps, hospital architects have not attached enough importance to the subject of hospital floors. In spite of the present-day system of ventilation, the isolation of kitchens, laundries and closets, the removal of all dirt of every character, the frequent use of disinfectants and the sterilizing of all instruments, the hospital cannot be sanitary unless it is provided with an aseptic floor. The wooden floor so common in many of our finest hospitals is not only quite out of keeping with the sanitary arrangements of the rest of the building, but it is a positive danger, from the fact that it becomes a harbor for microorganisms and infectious growths of all kinds. Wood, terrazzo, lead, tile, marble, glass, rubber and monolithic materials have been used, but none of these has proven entirely satisfactory. After examining all of the proposed floor materials, it must be admitted that the best so far discovered is the floor of baked clay tile, which consists principally of silicate of alumina, and is an inorganic substance which attains a greater hardness than almost any natural stone. It is so hard that a sharp steel point cannot scratch it, but merely makes a mark on it like a lead pencil. As a silicate of aluminum, it cannot be attacked by any acid, with the exception of hydrofluoric, which there is no occasion to use. As vegetable growths require nothing in the way of clay for their development, the clay is absolutely sterile as far as they are concerned. There has been much said about the cracks, or joints between the tile, but these are completely filled with pure cement grouted in hard so that the joint is but a joint in appearance and not in the sense of the open or unfilled joints of the wooden or rubber tile floor. Baked clay tiles, even in the joints between them, are nonabsorbent, germ-proof, fire-proof, impossible to stain, easy to keep clean, pleasing to the eye and very durable. While the "perfect hospital floor" may still be a thing of the future, the nearest approach to this goal of perfection has been reached by the clay tile, the sanitary and durable qualities of which are as yet unsurpassed by any flooring material.

Journal of Ophthalmology and Oto-Laryngology, Chicago

September

48 Improved Method for Extraction of Immature Cataractous Lens. H. E. Smith, Norwich, N. Y.
49 Hypertrophic Rhinitis in Southwestern States. W. B. Newton, Muskogee, Okla.

Cleveland Medical Journal

August

50 *Four Cases of Von Recklinghausen's Disease. H. N. Cole and H. K. Shawan, Cleveland.
51 Appendicitis During Pregnancy and Labor. A. H. Bill, Cleveland.
52 Activity of City of Charlottenburg, Germany, in Reduction of Infant Mortality. H. J. Gerstenberger, Cleveland.
53 Case of Vaginal Hemorrhage in New-Born. L. A. Pomeroy, Cleveland.
54 Some Indications for Surgical Treatment of Chronic Gastric Ulcer. F. C. Herrick, Cleveland.

50. **Von Recklinghausen's Disease.**—In four cases of von Recklinghausen's disease, occurring at the Lakeside Hospital in the past ten years, three patients had multiple cutaneous tumors and pigmentations; while in three of them large Ranken-neuromata, two of the face and one of the back, were found. In one patient an immense neuroma lymphangiectatica of the sternum was present. No especial functional disturbances were noted except pain in the cutaneous nodules in one of the cases and severe frontal headaches in another. In two of the cases the tumors were congenital, in another the growths were present for years; while in another trauma at the age of 2 years was given as the cause of the growth. Heredity was present in but one case, the patient's mother and three sisters being affected to his knowledge. Recurrence of a Ranken-neurom of the face, following operation was found in one case, but there was no sarcomatous change as is found in 12 per cent. of such cases. In three of the cases histologic examination revealed fibromata with enclosed nerves; while in the other patient the tumors were cut from nerves at the time of examination, though nothing was said of nerve tissue in the histologic description of the sections. It was impossible to corroborate Verocay's findings that the tumors arise from the sheath of Schwann or its precursor neurons and therefore should be called neurinoma. However, in one case the nerves were not well defined from the surrounding fibrous tissue and there was a marked increase in the nuclei of the sheath of Schwann.

Journal of Maine Medical Association, Portland

September

55 State and Condition of Medical Profession of Maine. E. H. Bennett, Lubec.
56 Acute Abdomen. J. B. Deaver, Philadelphia.
57 Tuberculosis of Lungs in Infants and Children. T. J. Burrage, Portland.
58 Cooperation in Medicine. B. F. Barker, Bath.
59 Medical Inspection of Public Schools. D. E. Dolloff, Biddeford.

Bulletin of Manila Medical Society

July

60 Postoperative Care of Surgical Patient. J. R. McDill.
61 *Urinary Pigment as Diagnostic Sign in Malaria. F. B. Bowman.
62 *Some Observations on Rupture of Uterus. F. Calderon.
63 Municipal Milk Supply and Suggestions for Its Betterment. J. H. Fitzbutler.
64 Progress of Medical Research in Philippine Islands. W. E. Musgrave.

61. **Urinary Pigment as Diagnostic Sign in Malaria.**—The urine from fifteen cases of malaria was examined by Bowman following the technic described by Uriolla for finding pigment elements and in fourteen of these specimens pigment granules were found. Then twenty-four specimens from cases with no symptoms of malaria and no previous history of "chills and fever" were examined and in twenty of these pigment granules were found similar to those seen in urine from the malaria cases. Bowman says that although pigment may be present in the urine in cases of malaria, as a method of diagnosing the disease it would seem to require a great deal of experience to distinguish the different kinds of pigment, definitely enough to make the examination of any practical value.

62. **Rupture of Uterus.**—Obstetric curettages (not gynecologic) are held to be very dangerous by Calderon and, he

says, should be done by the fingers whenever possible. In transverse presentations of dead or moribund fetuses, with the os dilated, the membranes broken, and the uterus in a state of tetanic contraction Calderon would not do a podalic version. Embryotomy should be performed to save the life of the mother. In cases with rigid, undilatable os where a rapid evacuation is necessary, as in cases of eclampsia and placenta prævia, Calderon says, it is better to extract the fetus by the abdominal route, otherwise the mother is exposed to the danger of cervical uterine tears.

Annals of Surgery, Philadelphia

September

65 Treatment of Fractures of Long Bones. R. H. Harte, Philadelphia.
66 Treatment of Far-Advanced Malignant Disease. J. H. Gibbon, Philadelphia.
67 *Extirpation of Tumors of Vomer Through Roof of Mouth. C. H. Mayo, Rochester, Minn.
68 *Pyloroptosis; Gastric Atony as Original Cause of Neurasthenia, Its Cure. A. Maclaren and L. E. Daugherty, St. Paul.
69 *Ulcer of Stomach and Duodenum with Special Reference to End Results. W. J. Mayo, Rochester, Minn.
70 Obstruction of Ileum by Large Gall-Stone; Enterostomy; Subsequent Cholecystectomy and Suture of Duodenum. F. B. Lund, Boston.
71 Chronic Colitis and Pericolitis. A. G. Gerster, New York.
72 Two Cases of Intussusception Caused by Lipoma of Descending Colon. H. R. Wharton, Philadelphia.
73 *Suppuration in Half of Horseshoe Kidney. J. E. Thompson, Galveston, Texas.
74 *Surgical Treatment of Fistula in Ano Without Mutilation of Sphincter. K. A. J. Mackenzie, Portland, Ore.
75 Case of Everted Dorsal Dislocations of Hip. O. H. Allis and J. B. Roberts, Philadelphia.
76 *Treatment of Oblique Fractures of Tibia and Other Bones by Means of External Clamps Inserted Through Small Openings in Skin. L. Freeman, Denver.
77 Acute Pneumococcus Infections of Extremities. C. A. Powers, Denver.
78 Dislocation of Hip Complicated with Fracture of Femur. G. H. Monks, Boston.

67. Extirpation of Tumors of Vomer Through Roof of Mouth.—In two cases of malignant disease of the vomer, each with a pear-shaped enlargement of the septum which completely closed the posterior nares, Mayo was able to remove the growth through the roof of the mouth by the removal of a section of the bone 1 inch long and ¾ of an inch wide. In neither of these cases was it necessary to sever the soft palate as advised by Nélaton—a procedure which, he says, complicates the technic of the operation and the after-care of the patient.

68, 69, 73 and 74.—Abstracted in THE JOURNAL, Aug. 5, 1911, pp. 505 and 506.

76. Abstracted in THE JOURNAL, July 29, 1911, p. 411.

Journal of Biological Chemistry, Baltimore

September

79 Further Experiments on Determination of Iodin in Thyroid. A. Seidell, Washington, D. C.
80 Erepsins of Glomerella Rufomaculans and Sphaeropsis Malorum. H. S. Reed and H. S. Stahl.
81 Studies on Melanin; III. Inhibitory Action of Certain Phenolic Substances on Tyrosinase. R. A. Gortner, Washington, D. C.
82 *Mucic Acid and Intermediary Carbohydrate Metabolism. W. C. Rose, New Haven, Conn.
83 Hydantoins: 1-Phenyl-2-Thiohydantoins from Some Amino-Acids. C. A. Brautlecht, New Haven, Conn.
84 Hydantoins: Synthesis of 3,5-Dichlortyrosine. H. L. Wheeler, C. Hoffman and T. B. Johnson, New Haven, Conn.
85 Studies in Carbohydrate Metabolism. F. P. Underhill, New Haven, Conn.

82. Metabolism of Mucic Acid.—Rose found that mucic acid, in doses of 10 to 20 grams, was not completely oxidized by rabbits, but was in part excreted unchanged in the urine. When given in doses of 20 grams to a medium-sized dog, mucic acid was excreted unchanged in the urine in amounts large enough to identify. The greater portion of the acid was not recovered. After large doses of mucic acid, only a very small increase in oxalic acid elimination occurs in rabbits and dogs. This increase is by no means as large as would be expected if mucic acid were one of the precursors of oxalic acid. Rabbits and dogs receiving the amounts of galactose and lactose stoichiometrically equivalent to 20 grams of mucic acid, excrete no mucic acid in the urine. Obviously, therefore, mucic acid is not an intermediary product in the metabolism of galactose-yielding sugars.

Journal of American Public Health Association, Columbus, O.

August

86 Bacteriologic Examination of Feces for Vibrio Cholera. A. M. Stimson, Washington, D. C.
87 *Bacteriologic Investigation of Commercial Ice Cream in Boston. E. A. Beckler and D. J. Dussossoit, Boston.
88 Relation of Universities to Public Health Work. H. W. Hill, Minnetonka, Minn.
89 Advantages of Cooperation Between State Boards of Health and State Universities. E. H. S. Bailey, Lawrence.
90 Relation of State University of North Dakota to State Board of Health. G. P. Ruediger, Grand Forks, N. Dak.
91 Relation of State Universities to Public Health Work. E. Barton, Urbana, Ill.
92 Purification of Water-Supply of Richmond, Va., by Sedimentation and Coagulation, Without Filtration. E. N. Ezekiel, Richmond.
93 Hypochlorite Treatment of Public Water Supplies: Its Adaptability and Limitations. G. A. Johnson, New York.
94 Practical Tests of Certain Factors in State Work Affecting Accuracy of Diphtheria Culture Diagnosis. A. J. Chesley, Minnesota.

87. Commercial Ice Cream.—The bacteriologic examination of ice cream in the city of Boston made by the authors showed that much of it contains more than 500,000 bacteria per cubic centimeter, the legal maximum. This is due partly to the large bacterial flora of the cream used, to long storage of the product, and in some cases to unsanitary methods of manufacture. Their analysis of samples of cream indicate that even the careful manufacturer, unless he has an exceptionally good cream-supply or depends on pasteurization, cannot expect to produce ice cream with a bacterial content within the legal limit.

Northwest Medicine, Seattle

September

95 Surgical Operations on Obese and Advantage of Preparatory Fasting. A. E. Rockey, Portland, Ore.
96 Arteriosclerosis with Special Reference to Heart and Kidneys. C. Neu, Seattle, Wash.
97 Some Recent Forms of Treatment of Arteriosclerosis. W. C. Heussy, Seattle.
98 Fundus of Eye in Arteriosclerosis. G. W. Swift, Seattle.
99 Health Inspection as Applied to Individual. E. V. Silver, Salt Lake City, Utah.
100 *Specialist and General Practitioner, Their Work and Professional Relations. H. Weir, Portland, Ore.
101 Some Clinical Facts About Ulcer of Stomach. G. F. Koehler, Portland, Ore.
102 Cerebral Palsies of Childhood, Importance of Early Diagnosis. R. P. Smith, Seattle, Wash.

100. Specialist and Practitioner.—Weir pleads for closer association of practitioner and specialist, for more frequent consultation, for increased confidence and exchange of professional courtesies, for more consideration of the rights and limitations of each, for full written reports and greater attention to the diagnosis, the value and necessity of such reports, for especial consideration of the rights of the practitioner who refers his patient to the specialist, but does not release or discharge him by so doing, for more specific information from the practitioner regarding the man as well as regarding the medical aspects of the patient he refers, for unity in treatment as well as generosity of service, and, last, but not least, combined effort to protect each from the man who will not pay his bills.

Archives of Internal Medicine, Chicago

September 15

103 *Pathologic Anatomy of Exophthlamic Goiter. D. Marine and C. H. Lenhart, Cleveland.
104 Symptomatology of Temporosphenoidal Tumors. F. Kennedy, New York.
105 Further Experience in Preventive Treatment of Rabies with Unchanged Virus Fixe. F. Proescher, Pittsburgh.
106 Some Chemical Transformations of Proteins and Their Possible Bearing on Problems in Pathology. F. P. Underhill, New Haven, Conn.
107 *Studies on Water-Drinking. P. B. Hawk, Urbana, Ill.
108 Immediate Effect on Complement Fixation Test for Lues of Treatment with Salvarsan. C. F. Craig, Washington, D. C.

103. Exophthalmic Goiter.—The thyroids of sixty-nine cases were studied by Marine and Lenhart. They found that the anatomic changes in the several body tissues in exophthalmic goiter are variable and manifold. The most prominent and most constant change is active hyperplasia of the thyroid and lymphoid tissues. These changes are not constant, since the exophthalmic goiter syndrome, as at present recognized, may coexist with a normal thyroid, with a colloid goiter, with an actively hyperplastic thyroid, with an atrophic thyroid or with a tumor of the thyroid. The great majority of individuals presenting this syndrome in recognizable form have some degree of thyroid and lymphoid hyperplasia, and

all true cases have had, during the developmental stage, active thyroid and lymphoid hyperplasia. Active thyroid and lymphoid hyperplasia are not specific for this syndrome, since similar anatomic changes are present in a variety of other abnormal body states.

The series of anatomic changes which occur in a thyroid as it passes from its normal or its colloid state through active hyperplasia and on to atrophy or to colloid goiter represents this tissue's biologic reaction whenever those biochemical disturbances in the organism's nutrition occur which excite its compensatory activity. Active thyroid hyperplasia means thyroid insufficiency, and although the causes which excite this activity are unknown and, therefore, may or may not be multiple, still, the basic anatomic reaction of the thyroid tissue seems to be the same in all the several clinical varieties of goiter and, indeed, seems to be the only one with which the thyroid tissue is endowed. The only defined physiologic activity of the thyroid secretion is that determined by its iodin content. Iodin is related to the exophthalmic goiter thyroid in the same way that iodin is related to the thyroid of other clinical associations and of other animals as well, viz., that iodin varies inversely with the degree of active hyperplasia. The ability of the exophthalmic goiter thyroid to take up iodin varies with the degree of active hyperplasia (hence inversely with the amount of iodin present) and is similar to that of other active thyroid hyperplasias in man and the lower animals. Iodin induces the same series of anatomic changes in exophthalmic thyroid goiter as in the other varieties of thyroid hyperplasias in man and animals.

The temperature and pulse reactions both before and after operation tend to vary with the degree of thyroid and lymphoid hyperplasia. The differences between the reactions in cases with normal or with colloid glands and the reactions in cases with marked hyperplasias are too slight for a suggestion of any cause and effect relation. The pulse and temperature reactions and the thyroid hyperplasia are parallel and resultant phenomena dependent on more general and more remote causes. An incomplete exophthalmic goiter syndrome may exist with the thyroid normal, or, the thyroid may be markedly hyperplastic with the syndrome absent, or, finally, the histologic structure and iodin content of the thyroid in a given case of exophthalmic goiter may be reversed without necessarily modifying the symptom-complex. Myxedema does not precede; it occasionally accompanies, but usually supervenes late in the course of exophthalmic goiter and is to be looked on as the end stage of thyroid insufficiency. The immediate postoperative mortality with its associated high temperature and pulse-rate in uncomplicated cases, varies with the degree of active lymphoid and thyroid hyperplasias and is most probably the result of the organism's profound general weakness and exhaustion. The degree of active lymphoid and thyroid hyperplasia is therefore the best index of the severity of the disease. The authors emphasize that the essential physiologic disturbance of the thyroid in exophthalmic goiter is insufficiency, its reaction compensatory and its significance symptomatic.

107. **Water-Drinking.**—The problem studied by Hawk was the activity of the pancreatic function under the influence of water-drinking at meal time. Normal men were used as subjects and were required to ingest a diet uniform in all respects from day to day. Three experiments were made, each experiment being divided into three periods; a fore period in which the subject was brought into nitrogen equilibrium through the ingestion of the uniform diet supplemented by a minimal water ingestion; a water period during which the water ingestion at meal time was increased from 1,500 to 4,000 c.c. per day; and an after period in which the dietary conditions of the fore period prevailed. Two of the experiments were on the influence of moderate water-drinking and in these the volume of the extra water ingested during water period was 1,500 c.c. per day or 500 c.c. per meal. In the third experiment the influence of copious water-drinking was studied and in this instance the subject was required to ingest on each day of the water period 4,000 c.c. above that ingested in the fore and after periods. On the basis of the data gathered in this and in associated investigations Hawk is prepared to draw the general conclusion that the ingestion of quantities of water at meal-time ranging in volume from ½ to 1⅓ liters stimulate the pancreatic function in two ways: first, a direct stimulation of the nervous mechanism of the pancreas brought about while the water is still in the stomach and, second, an indirect stimulation brought about on the entrance of the increased volume of acid chyme into the duodenum. The drinking of water with meals ought therefore to bring about a more rapid and complete digestion and absorption of the fat and carbohydrate constituents of the diet, two observations verified by experimentation in the laboratory.

Southern Medical Journal, Nashville

September

109 Tuberculosis. R. Matas, New Orleans, La.
110 Arterial Changes Associated with Cardiac and Renal Disease. W. H. Witt, Nashville, Tenn.
111 Pellagra-Symptoms, Diagnosis and Treatment. J. G. Wilkinson, Ragland, Ala.
112 Importance of Pure Food. L. W. Johnston, Tuskegee, Ala.
113 Visceroptosis. J. N. Baker, Montgomery, Ala.
114 Conservation of Health. T. D. Coleman, Augusta, Ga.
115 Complications and Sequelæ of Measles, Based on Study of Four Hundred and Seventy Cases. T. Weaver, Nashville, Tenn.
116 *Case of Coxa Vara. W. C. Campbell, Memphis, Tenn.

116. Abstracted in THE JOURNAL, Dec. 3, 1910, p. 2006.

Medical Record, New York

September 23

117 *Value of Radium Treatment in Cancer of Digestive Tract. M. Einhorn, New York.
118 Two Cases of Little's Disease. M. Neustaedter, New York.
119 Chorioepithelioma Malignum. W. H. Dukeman, Los Angeles, Cal.
120 Skin Grafting. A. E. Isaacs, New York.
121 Clinical Study of Forty-Four Cases of Pneumothorax Occurring in Pulmonary Tuberculosis. J. M. Cruice, Philadelphia.
122 Neuropathic Joint Disease. L. S. Manson, New York.
123 Arteriosclerosis. W. F. Waugh, Chicago.
124 Soy Bean Cookery. J. Ruhrah, Baltimore.

117. **Radium Treatment in Cancer of Digestive Tract.**—Einhorn believes that benefit is obtained in inoperable cancer of the stomach from the application of radium directly by an apparatus introduced into the stomach by way of the esophagus. By this means, he says pain is diminished, hemorrhage is controlled, and life is prolonged, and if the treatment is begun early enough absolute cure may be obtained. The author presents the histories of seven cases of disease of different parts of the stomach.

New York Medical Journal

September 23

125 *Experimental Poliomyelitis. M. Neustaedter and W. C. Thro, New York.
126 Fifty Cases of Syphilis Treated with Salvarsan, with Special Reference to Clinical Result and Wassermann Reaction. A. L. Wolbarst, New York.
127 Three Cases of Supravaginal Hysterectomy for Fibromyomata Uteri. I. Collica, New York.
128 Law, Medicine and the State; Some Points of Contact. F. K. Hallock, Cromwell, Conn.
129 Railway Sanitation. C. P. Wertenbaker, Norfolk, Va.
130 Résumé of One Hundred Wassermann Tests. J. A. Roddy, Philadelphia.
131 Sarcoma Arising from Thymus Gland in Adult: An Associated Endothoracic Goiter. J. Funke, Atlanta, Ga.
132 Nasal Obstructions as Causative Factors in Bronchial Asthma Cases. J. Solow, New York.
133 Occipital Atlas and Atloaxis Dislocation. L. L. Thompson, Gridley, Cal.

125. **Experimental Poliomyelitis.**—On the basis that the virus of anterior poliomyelitis lurks in the dust and that the nasopharynx must be the point of entry, the authors collected the dust of rooms wherein cases of poliomyelitis occurred and prepared extracts from these sweepings, which they injected into monkeys (of the species Rhesus) subcutaneously, intraspinally and intracerebrally. Until now they have used six monkeys for their experiments. The sweepings were obtained from cases of from six months' to three days' duration after the onset of the paralysis. The following is a report of one of these experiments: August 29, they obtained the sweepings of a room wherein a 4-year-old child was stricken with poliomyelitis and was then two days paralyzed. In this room the child passed most of its time and also was there confined to bed. The dust, about 50

grams, was macerated overnight with 30 cubic centimeters of sterile water and then shaken for one hour. The mixture was filtered through a paper filter and 15 cubic centimeters of this filtrate were passed through a special Bougé filter under high pressure within an hour.

Within eighteen hours after the collection of this dust 5 cubic centimeters of the filtrate were injected into a monkey through the spinal canal after having first withdrawn 5 cubic centimeters of a clear spinal fluid and 8 cubic centimeters were injected subcutaneously. After the injection the animal was depressed and sullen and inattentive to its surroundings. On the following day the monkey was perfectly well and remained so until September 4, six days after the injection, when it was very ill and paralyzed. The animal presented the following symptoms: Flaccid paralysis in the right foreleg, which was hanging down from his side; he was unable to move it. There was a marked paresis of both hind legs, most pronounced in the left. He was able only with great difficulty to move about in his cage and this he accomplished by holding on to the bars with the left foreleg and hopping about. The patellar and plantar reflexes were absent. On extending the hind legs he shrieked, evidently from pain. He was chewing his food at times, but was rather sullen and depressed, keeping continually to a corner of his cage, holding on with his left forepaw, and lying down when unobserved. The muscles of his neck were not rigid, the pupils were normal and reacted to light promptly. A lumbar puncture was made repeatedly, but without success. Two drops of a gelatinous material were obtained from the needle, after withdrawing it from the spinal canal.

September 6, two days later, he still showed all the symptoms mentioned, but more marked, and still chewed his carrot. A spinal puncture was made and 2 drops of a gelatinous material obtained.

The animal was then killed and the following are the results of the autopsy: There was a marked hyperemia of the meninges in the lumbar region and a lesser one in the cervical region; the vessels of the brain cortex and cord were markedly congested. This hyperemia was evident at all the levels of the cord, in the medulla, the pons, the ventricles and basal ganglia. The cord and brain presented an edematous condition. On section, one could note hemorrhages in the gray substance of the cord, especially in the lumbar and cervical regions. There were also some hemorrhagic foci in the medulla, while the white and gray substance of the brain presented microscopically a normal appearance. The viscera presented the following changes: Areas of congestion in the middle and lower lobes of the left lung; the spleen was firm and congested, but not enlarged; the omentum was adherent to the cecum and all the visceral vessels were very much congested. All other organs and glands were, to all appearance, normal.

Sections of the spinal cord, cerebellum, pons, medulla, brain, spinal and basal ganglia were now emulsified in 50 cubic centimeters of normal salt solution and preserved for injections. The authors believe that they have thus proved that: Acute poliomyelitis is both infectious and contagious; that it is propagated by the dust, and that the nasopharynx must be the port of entry.

Illinois Medical Journal, Springfield

September

134 *Liberal Diet in Typhoid. J. L. Miller, Chicago.
135 *Clinical Determination and Significance of Some of Peripheral Signs of Aortic Insufficiency. F. Tice, Chicago.
136 Arteriosclerosis. M. S. Marcy, Peoria, Ill.
137 Prevention of Blindness. T. A. Woodruff, Chicago.
138 Health-Conscience and Drink Problem. C. B. Johnson, Champaign, Ill.
139 Intestinal Toxemia. M. H. Mack, Chicago.
140 General Anesthesia: Some Methods Now in Use. G. C. Kasdorf, Robinson, Ill.
141 Modern Indications in Treatment of Heart Disease. A. E. Taussig, St. Louis.
142 Outlook for Medical Profession from Legislation and Economic Viewpoints. C. J. Whalen, Chicago.
143 Infantile Paralysis. V. A. McClanahan, Viola, Ill.
144 Case of Bence-Jones Albumosuria. C. A. W. Zimmerman, East St. Louis, Ill.

134 and 135. Abstracted in THE JOURNAL, June 17, 1911, p. 1843.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Journal of Children's Diseases, London

August

1 *Keratomalacia. S. Stephenson.
2 *Surgical Aspects of Acute Abdominal Disease in Childhood. H. S. Clogg.
3 Tuberculosis of Brain with Involvement of Both Optic Thalami. R. B. Ness and W. M. Elliott.

1. **Keratomalacia.**—Keratomalacia is essentially a disease of early infancy. The average age of Stephenson's thirty-one cases was four and one-half months. He has never seen the disease except in the children of the poor. The disease hardly ever occurs in breast-fed babies. Two alone of Stephenson's patients, or 6.46 per cent., were entirely breast fed. Syphilis was diagnosed clinically in seven, or in 22.58 per cent. Tuberculosis is an important cause of keratomalacia in infants. It existed in six, or 19.36 per cent. of the cases, the diagnosis being made during life in three and after death in three of the children. Of the twelve fatal cases tuberculosis was present in three. The disease was of the generalized type, as is usual in children so young with pulmonary or meningeal manifestations. Marasmus, pure and simple, accounted for seven, or 22.58 per cent. of the thirty-one cases. In two of the cases, or 6.45 per cent., the cause of the corneal mischief remained altogether obscure.

2. **Acute Abdominal Disease in Childhood.**—Clogg's own experience of ninety-eight cases of the "acute abdomen" in children under 12 years of age shows the diseases represented as follows: Appendicitis, fifty-four cases, pneumococcal peritonitis, six cases, inflammation of the diverticulum of Meckel, two cases, intussusception, twenty-eight cases, intestinal obstruction by a band, three cases, intestinal obstruction from adhesions, four cases, intestinal obstruction from pressure of mesenteric glands, one case. No case of gastric or duodenal ulcer came under his observation.

Journal of Laryngology, Rhinology and Otology, London

September

4 Carcinoma of the Nasopharynx in Girl of 17. T. Guthrie.
5 Evisceration of Tonsils. C. G. R. Wood.
6 Treatment of Pulmonary Tuberculosis, Diseased Lacrimal Ducts, Catarrhal Otitis Media, Hay-Fever and Chronic Asthma Not Complicating Heart Disease. C. A. Bucklin.
7 Intracranial Dehiscences of Cavities of Ear and Dehiscences of Aqueduct of Fallopius. J. Meuret.

Medical Press and Circular, London

August 23

8 Diagnosis of Pyelonephritis. Tuffier.
9 Congenital Dislocation of Hip, Its Treatment. R. L. Swan and W. C. Stevenson.
10 Similarity Between Signs of Hematocele and Early Malignant Disease of Testicle. H. F. Woolfenden.

August 30

11 *Mayor's Scarf; How to Make It, How to Use and Apply It, and What to Apply It For. C. Marton.
12 Necessity for State Support of Hospitals. J. C. McWalter.
13 Fatal Result from Salvarsan. F. P. Weber.
14 Roentgenotherapy of Ringworm. J. Hall-Edwards.
15 Clinical Diagnosis of Early Tabes Dorsalis with Negative Wassermann Reactions. T. A. Williams.
16 Diagnosis and Treatment of Simple Glaucoma. A. A. Bradburne.

September 6

17 Recalcification (Ferrier) in Treatment of Tuberculosis. P. Rostaine.
18 Physiologic Measures in Therapeutics of Nervous Disease. T. A. Williams.
19 *Hereditary Protection Against Toxemia of Measles. T. J. O'Meara.
20 Prevention of Dental Caries from Public Health Standpoint. J. Wheatley.
21 Extra-Uterine Pregnancy: Its Pathology and Treatment. W. Krupp.
22 School Hygiene. J. O. Symes.

11. **Mayor's Scarf.**—Mayor's scarf consists of a square of stout material measuring 40 inches across, folded obliquely; 40 inches of an ordinary 3-inch bandage; a plug of carded cotton about 6 inches long and 3 or 4 inches thick; a dozen stout safety-pins. Place the plug of cotton in the arm-pit, bring the bent elbow close to the trunk and apply the base of the triangle formed by the scarf above the elbow, the apex being below. Draw it tight round the trunk and fix the ends of the scarf firmly at the back with safety-pins. The middle of the base of the triangle must not be opposite the arm, but nearer the middle line of the body, and the edge of the

scarf should cross the arm at the junction of the lower third with the upper two-thirds. If placed higher up it would press on the radial nerve and cause pain. The next step is to pass the two pendant corners of the folded scarf upwards beneath the elbow and forearm, placing one of them on each shoulder. Attach to these corners the ends of the bandage which, passing over the corresponding shoulders, is to be fixed to the scarf behind the trunk. Fix the layer of the scarf in front of the elbow to the layer behind it by means of a safety-pin placed in the angle formed by the forearm flexed on the arm. The hand can be placed in the gutter formed by the folded scarf or left outside as the patient may prefer. The latter is, on the whole, to be preferred, because it leaves the patient free to move the wrist and fingers. Mayor's scarf, as this apparatus is called, is said by Martin to be of the greatest service in quite a number of different conditions; for instance: (1) To immobilize the upper limb which is the seat of injuries to be attended to later on. It allows of the patient's being transported without undue pain. (2) In fractures of the clavicle, in which three indications are to be met: (a) The shoulder must be thrown outwards, for which purpose a cotton plug is placed in the axilla so as to serve as a fulcrum when the arm is brought close to the body. (b) External fragment is raised by raising the upper limb as a whole. (c) The internal fragment is lowered which can be done by applying a cotton or horse-hair cushion over this fragment; this is kept in position by placing it underneath the scarf bandage that runs over the shoulder and is fixed to the back part of the scarf, to which it is further secured by pinning it to the bandage. The apparatus must be frequently inspected in order to reduce the resulting deformity to a minimum. (3) In injuries to the shoulder in which the primary indication is to relieve the pain (fracture of the acromion or scapula). (4) To immobilize the shoulder when this joint is the seat of arthritis. (5) To fix the shoulder after reduction of dislocation. (6) In fractures of the upper end of the humerus: anatomic neck, head, fracture of the tuberosities in which early massage has to be employed, beginning on the sixth or seventh day. Pending recourse to massage and between the sittings the arm is maintained in position by the application of the scarf. Also in fractures of the humerus where there is no tendency to displacement. (7) For fixation of the elbow after reduction of dislocation of this joint; traumatism of the elbow without displacement of the fragments: fractures of the external or internal condyle of the humerus.

19. **Hereditary Protection Against Toxemia of Measles.**—The history of measles on Cape Clear Island for sixty-seven years is cited by O'Meara to show that immunity against the toxemia of measles is gradually acquired in insular communities where isolation is practiced. The first and subsequent epidemics in such communities can only be protective against future attacks of malignant measles in proportion to the numbers affected. This is what has occurred in Cape Clear, as the inhabitants during each epidemic isolated the cases as early as possible, and by this means always succeeded in preventing the outbreaks from becoming pandemic. Furthermore, the course of the disease during the past thirty years shows that this immunity is hereditarily acquired, the death-rate having fallen practically in proportion to the percentage of parents who had measles before marriage.

Clinical Journal, London

August 23

23 Diagnosis of Causes of Chronic Muscular Insufficiency of Stomach. C. Bolton.
24 Influence of Diabetes and Gout on Tuberculous Infections of Human Body. N. Raw.

August 30

25 Physician's Experience of Salvarsan. O. F. F. Grunbaum.
26 Acute, Simple and Tuberculous Enlargement of Glands. D. C. L. Fitzwilliams.
27 *Influence of Syphilis on Tuberculous Infections of Human Body. D. Power.

September 6

28 *Some Abdominal Emergencies from Standpoint of Physician. F. J. Poynton.
29 Abdominal Emergencies, Their Treatment and Prevention. J. Sherren.
30 *Investigation Into Effect of Pituitary Extract on Bowels After Abdominal Operations. L. A. Bidwell.

27. **Influence of Syphilis on Tuberculous Infections.**—According to Power children with heredo-syphilis often show signs of tuberculous disease of the joints in the form of a "gummatous" synovitis which does not improve beyond a certain point under treatment by antisyphilitic remedies. In young adults born of syphilitic parents an attack of pneumonia or other infective disease may be followed by signs of syphilitic inflammation (syphilis hereditaria tarda). The syphilitic lesions thus manifested may become tuberculous and the patient may die of tuberculosis. Adults who acquire syphilis while they are suffering from active tubercle are liable to have any preexisting tuberculous inflammations rendered much more active. It is to these persons that the generalization applies, "The tuberculous bear syphilis badly." Old persons who acquired syphilis many years previously may be attacked by senile tuberculosis. In such persons the disease runs a more chronic course than usual and there is less tendency to suppuration.

28. **Abdominal Emergencies.**—In his discussion of gastric ulcer Poynton says he is certain that early feeding on the lines of Lenhartz' method is practically and scientifically wrong. Post-mortems on six cases that he has had under his care have shown in each essentially the same feature, an open vessel in an ulcer which, acute or subacute, may or may not be in a healing stage. He sees no hope for success unless absolute rest is given to the stomach and allow the vessel to become sealed by clot. He allows nothing at all by the mouth, uses strict rectal feeding and water enemata, and limits abdominal movement with a binder.

30. **Pituitary Extract After Abdominal Operations.**—To discover how far pituitary extract, unaided by aperients, is able to restore peristaltic contractions after abdominal operations Bidwell tried its effect on twenty-one unselected laparotomies. In the first two cases the dose given was .5 c.c. This was commenced twelve hours after the operation, and given every four hours for three days. In the latter cases the dose was increased to 1 c.c. for adults; it was commenced about six hours after operation, and repeated every four hours until eighteen doses had been given. From the result of the injections in these cases it is evident that pituitary extract has a very marked effect on the muscular coats of the bowel, and that it is able to overcome the temporary paralysis due to exposure. This is shown by the early passage of flatus and by the absence of abdominal discomfort. In only three cases did the bowels act without the assistance of an enema, but in every case, except two, a satisfactory action of the bowels was obtained after a simple enema, and it was unnecessary to give any aperient by the mouth. All the patients passed flatus freely within a few hours of the first injection, and were free from any abdominal pain or distention; no patient complained of flatulence. The flatus was often passed freely without the introduction of a flatus tube. The pulse-rate remained much lower than usual, and after some of the severest operations it did not exceed 80 per minute. Except in the last two cases no patient suffered from postoperative retention of urine, and so catheterization was unnecessary. Bidwell says that the patients treated with injections of pituitary extract after abdominal operations are certainly more generally comfortable than those who do not receive them. He does not, however, consider that the drug can be relied on completely to empty the bowels without the assistance of enemata, and so he does not think that it need be employed after the first twenty-four hours. He would recommend three injections of 1 c.c. each during the first twenty-four hours as a routine practice after laparotomies; this will enable the patient to pass flatus freely, will prevent any flatulent distention, and will lessen the amount of aperient necessary for a thorough clear-out of the bowels. The injections must be made into a muscle, and should never be given subcutaneously, as the latter method causes considerable pain. The first injection should be given six hours after the operation, and the other two at intervals of six hours. No further injection need be given unless the patient complains of flatulent distention. He has never seen any unpleasant general symptoms follow these injections.

Glasgow Medical Journal

September

31 Carcinoma of Male Mammary Gland; Report of a Case. G. T. Beatson.
32 Abdominal Emergencies. D. Macartney.
33 Inflammatory Affections of Fallopian Tubes and Ovaries. W. D. MacFarlane.

Annals of Tropical Medicine and Parasitology, Liverpool

August

34 Tropical Diseases in Southern Italy. U. Gabbi.
35 Papataci Flies (Phlebotomus) of Maltese Islands. R. Newstead.
36 *Experimental Transmission of Goiter from Man to Animals. R. McCarrison.
37 *Reducing Action of Trypanosomes on Hemoglobin. R. W. Nauss and W. Yorke.
38 Antimalarial Operations at Ismailia. J. W. W. Stephens.
39 Some New Species of African Mosquitoes (Culicidæ). R. Newstead and H. F. Carter.
40 Diagnosis and Distribution of Human Trypanosomiasis in Colony and Protectorate of Gambia. J. L. Todd and S. B. Wolbach.
41 *Mechanism of Production of Suppression of Urine in Blackwater Fever. W. Yorke and R. W. Nauss.
42 *Relation of Organic Phosphorus Content of Various Diets to Diseases of Nutrition, Particularly Beriberi. G. C. E. Simpson and E. S. Edie.

36. **Experimental Transmission of Goiter.**—McCarrison records his experiments made to test the assumption that goiter could be transmitted from man to animals by infected feces and at the same time determine the influence, if any, which earthworms might possess in spreading the disease. Sixteen goats were used in these experiments. The results in McCarrison's opinion prove that a hypertrophy of the thyroid gland of goats can be induced by infecting the water-supply with the feces of sufferers from goiter. It is, at present, impossible to state whether this hypertrophy is due to the action of the infecting agent of goiter, or only to the organic impurity of the water thus contaminated. Earthworms do not appear to be concerned in the spread of goiter. Goiter is essentially a disease of country localities, that is, of localities of unprotected water-supplies. In India McCarrison has found, from a study of the topography of a very large number of villages, that the freedom, or the reverse, of any particular village from this disease depends very largely on the extent to which the drinking water is contaminated by irrigating fields, which are fertilized with human and animal excreta. The source of the water-supply and the geological formations from which it is derived are, in comparison, of minor importance. Further experiments on goats are at present in progress, with a view to confirming the results detailed above. These experiments have not long been in progress, but already five out of twelve goats which are drinking fecally contaminated water show signs of enlargement of the thyroid, while no changes have occurred in the thyroids of twelve control animals. The final results of these experiments and the microscopic appearance of the glands will be detailed in a subsequent report.

37. **Reducing Action of Trypanosomes.**—The blood of certain animals in the later stages of trypansomal infections is frequently of a dark purple color. This appearance the authors claim results from deficient oxygenation of the hemoglobin. Living trypanosomes cause marked reduction of solutions of methylene blue and also of those of oxyhemoglobin. The incubation, in the absence of air, of living trypanosomes in defibrinated blood of a normal animal causes considerable reduction or, if the parasites be numerous, total disappearance of the oxygen combined with the hemoglobin. A correspondent increase in the amount of carbon dioxid has not yet been found. The mere presence of numerous parasites in the peripheral circulation is not, however, sufficient to account for the purple color of the blood, since the blood of rats and guinea-pigs swarming with parasites is usually of normal bright-red appearance. The purple color is most marked in the blood of rabbits in the later stages of the disease. Although the peripheral blood of these animals does not contain large numbers of parasites, yet the respiratory passages are found to be considerably involved. The nasal mucous membrane and that of the trachea and bronchial tubes is often extremely edematous and infiltrated, and the respiration of the animal is stertorous and labored. On microscopic examinations of sections of these tissues trypanosomes were often found in large numbers in the edematous mucous and submucous tissue.

41. **Suppression of Urine in Blackwater Fever.**—It is evident from the author's experiments that, under certain conditions, the mere passage of hemoglobin through the kidneys of a healthy animal is sufficient to cause suppression of urine owing to occlusion of the lumen of the renal tubules by plugs of granular material derived from the hemoglobin. The process is considerably facilitated by any factor which tends to lower the blood-pressure of the animal, and as a result the secretion of water by the Malphigian capsules. On the other hand, when the blood-volume of the animal is kept up by the injection of saline solution and by feeding the animal on moist food, a large amount of hemoglobin (38 gm.) may be injected without any tendency to suppression of urine.

42. **Organic Phosphorus Content of Various Diets and Diseases of Nutrition.**—The lack or deficiency of organic phosphorus in the diet is held by the authors to be the exciting cause of beriberi in the majority of cases. In other cases the differences may be individual in the patient, since some individuals require much larger amounts than others, and others may be unable to absorb and assimilate the compounds, though present in the diet. Occasionally, epidemics of beriberi appear to be due to a bacterial infection of the gastro-intestinal tract, either through the catarrh interfering with absorption or to the bacteria (or their products) absorbing or splitting the organic phosphates before they could be absorbed. Tropical beriberi is a disease of metabolism due to the amount of organic phosphorus compounds assimilated being below that essential for the human organism. This is in the majority of cases due to deficiency of organic phosphates in the diet, but may in occasional cases be due (a) to deficient absorption of organic phosphates by the alimentary tract, or (b) to bacterial infection possibly splitting the phosphates before absorption or interfering with the absorptive power of the intestine.

Annales des Maladies des Org. Génito-Urinaires, Paris

July 1, XXIX, No. 13, pp. 1153-1248

43 Improved Technic for Catheterization of the Ureter. M. Heitz-Boyer.

July 15, No. 14, pp. 1249-1344

44 *Endovesical Operations for Tumors of the Bladder. J. Doré and J. Mock. Concluded.

August 1, No. 15, pp. 1345-1440 and Supplement

45 *Sexual Functioning After Freyer's Operation for Hypertrophied Prostate. (Les canaux éjaculateurs dans l'hypertrophie prostatique et les fonctions sexuelles après la prostatectomie de Freyer.) F. Legueu and E. Papin. Commenced in No. 13.
46 Temporary Ureterostomy for Diagnosis of Kidney Functioning. G. Key.
47 Six Cases of Cystitis with Partial Retention of Urine. M. Cealic and L. Strominger.
48 *Refractometric Estimation of Hydremia in Kidney and Heart Disease. (L'hydrémie des brightiques et des cardiaques oedémateux.) F. Widal, R. Benard and E. Vaucher.
49 Functional Exploration of the Kidneys; the Secretion of Urea. M. Heitz-Boyer.
50 Resistance to Traumatism After Nephrectomy. A. Pousson.
51 Kidney Cysts. F. Legueu and H. Verliac.
52 Successful Partial Resection of Tuberculous Horseshoe Kidney. V. Carlier.
53 Kidney Calculi. M. Rafin.
54 Prolapse of the Ureter into the Bladder. P. Bazy.
55 Cystoscopic Diagnosis of Bladder Tumors. G. Marion.
56 Early Prostatectomy in Cancer of the Prostate. E. Desnos.
57 Tertiary Syphilis in the Urethra and Urethral Fistulas. E. Michon.
58 The Gonococcus. (On connait mal le gonocoque.) J. Janet.
59 Novocain in Spinal Anesthesia in Urology. E. Jeanbrau.

44. **Endovesical Operations for Bladder Tumors.**—Doré and Mock describe the technic preferable under various conditions, comparing the methods of different operators, and reporting in detail seventy-six cases which they have compiled, including a large number previously unpublished. There was never any serious hemorrhage and the lesion soon healed. A point to be borne in mind is that as long as any clots remain in the bladder the organ contracts on them and this may keep up a tendency to hemorrhage. The patient should be reexamined every month the first year and after this at longer intervals. There was no recurrence of the tumor in 75 per cent. of the forty patients kept under supervision for two years.

45. **The Sexual Functions with Hypertrophy of the Prostate and After Freyer's Prostatectomy.**—Legueu and Papin report extensive clinical and experimental experiences, with numerous illustrations, and review eighteen cases in which the Freyer operation was done with necropsy later. They then review sixteen others on record in which the Freyer operation was done and sexual functioning thereafter recorded, with an additional group of nine cases from their own experience. In their nine cases the sexual functioning was unimpaired in all but two cases, and one of these was a man of 64. The anatomic and clinical data thus reviewed sustain the assumption that the Freyer technic does not interfere in the least with the genital functions, leaving this apparatus intact, ejaculation occurring exteriorly. By the relief from compression the operation may even rejuvenate the sexual functioning.

48. **Refractometric Estimation of Hydremia.**—This article is in the supplement of 186 pages which is issued in honor of the fact that the *Annales* is just entering its thirtieth year and of the Second International Congress of Urology held the same year. Widal opens the list of articles with a recommendation of the use of the refractometer as a means of estimating the dilution of the blood in chronic kidney and heart disease, supplementary to estimation of the degree of infiltration of the tissues by weighing the patient. By this means the action of drugs can be instructively studied, especially after the patient has been on a salt-poor diet for a time.

Annales de Médecine et Chirurgie Infantiles, Paris

July 15, XV, No. 14, pp. 433-464

60 Bromoform Poisoning in Child with Whooping-Cough. E. Merot.
61 *The Heart in Rheumatism Involving the Viscera in Children. E. Weill and G. Mouriquand.

August 15, No. 16, pp. 497-528

62 Tracheobronchial Glandular Disease in Children. H. Grenet and M. Maillet.

61. **The Heart in Rheumatism in Children.**—Weill and Mouriquand say that even the apparently mildest rheumatism in a child, not causing the slightest appreciable symptoms, may yet entail heart trouble, possibly fatal. This is accepted as a matter of course in acute articular rheumatism, in which the heart behaves like a joint, but it is not generally known that a slight attack of rheumatism, with merely vague pains or none at all, may be followed after a few weeks or months or years by a little pain in the precordial region and dyspnea. The heart beat is found 120 or 140, but regular, and there may be evidences of old mitral insufficiency and recent pericardial friction sounds. The liver is slightly enlarged, the base of the lungs congested and the child is pale and languid, without appetite. Under rest in bed, ice to the heart, digitalis and the salicylates the symptoms subside and all seems well after four or five days. If the temperature is taken, however, it will be found a little above normal and after a few days the syndrome recurs, to subside and return again. This alternation of symptoms is characteristic of the affection in question. No one imagines anything is seriously wrong until the terminal phase develops with aggravation of all the symptoms, vomiting and hemoptysis and the child dies in collapse, without signs at any time of true asystolia, dropsy or edema. They have encountered ten cases of this malignant rheumatic heart disease in children and discuss its various features. Their experience teaches the importance of vigorous salicylic medication in every case of rheumatism in a child, no matter how apparently mild, and the physician should watch over the heart afterward. Every tachycardia, every pain in the heart region with or without fever, should be regarded as signs of serious trouble, especially when there is accentuation of the second pulmonary sound. This latter indicates not only the participation of the pericardium but also the possibility of deeper lesions so often associated with the pericarditis. Weill advocates subcutaneous injections of sodium salicylate dissolved in twice the amount of water. From 2 to 4 gm. of this solution can be injected at one point without inducing a local reaction. Digitalis also relieves; the children with the affection seem to display a special tolerance for digitalis and the symptoms improve under it.

Archives Internationales de Chirurgie, Ghent

V, No. 2, pp. 125-244. Last indexed January 21, p. 227

63 *Exclusion of Urine from the Bladder in Treatment of Tuberculosis of the Bladder. (De la dérivation urinaire ou exclusion vésicale dans la tuberculose de la vessie.) C. Willems.
64 Osteomas in Muscles. (Contributo alla conoscenza dei cosi detti osteomi muscolari.) G. Marchetti.
65 Division of Muscles for Transplantation. (Divisione muscolare a scopo di trapianto.) A. Guaccero.
66 Experimental Research on Healing After Suture of the Kidney. (Nefrorrafia.) G. Palazzo.
67 *Conservative Treatment of Surgical Tuberculosis. G. Bolognesi.

63. **Exclusion of Urine from the Bladder in Treatment of Local Bladder Tuberculosis.**—Willems gives an illustrated description of severe tuberculosis of the bladder persisting after nephrectomy. He made an opening into the remaining kidney in the lumbar region and diverted the urine by a rubber funnel and tube into a long, narrow rubber bag strapped to the inner side of the leg. The patient was a man of 30, whose vesical tuberculosis had persisted for five years and had confined him to bed for the last nine months with incessant tenesmus, so intense that he was unable to sleep. He was restored to comparative health at once and wore the urinal for ten months, enchanted with it. As soon as the course of the urine was diverted, the bladder began at once to heal and all trouble from this source was at an end, but a tuberculous process in the wrist continued to develop, as he refused to allow it to be treated properly. Fifteen months after the exclusion of the bladder the young man had a drinking bout and caught cold, a cough and fever developed with dyspnea and the amount collecting in the receptacle grew less and less and he soon succumbed in coma, the remaining kidney having become tuberculous, or it may have been already infected at the time of the operation. Necropsy showed that the severe bladder lesions had completely healed. Legueu reported a somewhat similar case last year in which he diverted the urine from the bladder by implanting the ureter of the remaining kidney in the intestine. All bladder trouble subsided at once and the intestine seems to bear without harm this new task to date, eight months after the operation.

67. **Conservative Treatment of Surgical Tuberculosis.**—Bolognesi has applied immobilization with local iodoform injections in forty-two cases of various surgical tuberculous processes and in twenty-one cases the lesions have entirely healed and in twelve there has been great improvement, but no benefit was realized in four and an operation became necessary in five. About twenty-five pages are devoted to tabulation of the details. The large joints, especially the knee, were the hardest to cure but seven were cured and four improved of the seventeen knee lesions and both of the elbow lesions.

Archives des Maladies de l'App. Digestif, Paris

July, V, No. 7, pp. 349-408

68 Anatomy of Gastric Ulcerations. G. Hayem.
69 Pathogenesis of Catarrhal Jaundice. L. Lagane and M. P. Weil.
70 Dosage of Soaps in the Stool. (Dosage des savons dans les fèces.) M. Fabre.
71 Mechanical Treatment of Tendency to Swallow Air: Nose Clamp. (Traitement mécanique de l'aerophagie par la "pince nasale.") J. A. Sicard.

Archives de Médecine des Enfants, Paris

July, XIV, No. 7, pp. 481-560

72 High Shoulder with Multiple Malformations. (Elévation congénitale de l'omoplate chez un enfant atteint de malformations multiples. Hydrocephalie avec vestiges d'hémiplégie.) M. Nageotte-Wilbouchéwitch.
73 Causes and Remedies for Crime in Children. (Essai médico-psychologique sur les causes et les remèdes de la criminalité.) H. Dauchez.

August, No. 8, pp. 561-640

74 *Flabby Big Belly in Infants. (Le gros ventre flasque des nourrissons.) A. B. Marfan.
75 Study by Centrifugation of Butter in Breast Milk. (Etude du beurre dans le lait de femme.) E. Plauchu and R. Rendu.

74. **Flabby, Big Abdomen in Infants.**—Marfan refers to the enlargement of the abdomen from stretching of the atonic bowels plus a special flabbiness of the abdominal wall. Both these factors, the relaxation of the musculature of the digestive tract and of the walls enclosing it, are secondary to the

same cause which is producing the rachitis, as in nearly every case the pendulous belly is accompanied by signs of rachitic changes in the bones, and it forms part of what he calls the rachitic syndrome. Florid rachitis is often accompanied by atony of muscles. He believes that any infection or chronic intoxication occurring at a certain period of the development, this period extending from the latest months of intra-uterine existence to the end of the second year, is liable to entail rachitis; the most frequent of these causes are syphilis, tuberculosis and chronic digestive intoxication, but there are others. The infant reacts to these influences by changes in the cartilages and bone marrow, which interfere with normal ossification, and by changes in the blood and lymph-producing organs and in the glands, the latter possibly including changes in the parathyroids which may in turn induce tetany. The weakness of the muscles is another manifestation of the constitutional disturbance.

Bulletins de la Société de Pédiatrie, Paris

June, XIII, No. 6, pp. 253-331

76 The Abdomino-Costal Index in Children. P. Merklen.
77 Variations at Different Hours of Mineral Salt Content of Breast Milk. M. H. Barbier and Mascré.
78 *Treatment of Club-Foot in Infants by Subcutaneous Partial Scooping Out of the Tarsus. (Traitement du pied-bot chez le nourrisson par évidement sous-cutané du tarse.) M. Savariaud.
79 Intestinal Invagination. H. Triboulet and M. Savariaud.
80 *Spasm of the Glottis as Sole Manifestation of Tetany. H. Triboulet and Harvier.
81 *Esophagoscopy in Diagnosis and Treatment of Cicatricial Stenosis. G. Guisez.
82 *Anasarca in Two-Months' Babe Without Kidney Lesions. P. Nobécourt and Paisseau.
83 Meningitis with Mixed Infection. L. Guinon and H. Grenet.
84 *Clinical and Roentographic Diagnosis of Hypertrophy of the Thymus and Lymph-Nodes in the Anterior Mediastinum. d'Oelsnitz.
85 *Tuberculous Rheumatism. S. Veras.

78. **Club-Foot in Infants.**—Savariaud advocates a subcutaneous orthopedic operation for club-foot even in infants when it resists manipulations and the anterior portion of the calcaneus prevents even forcible correction. The ossification center must not be interfered with, so he aims to curet away mostly cartilage and encroach but very little on the bone. The bistoury is pushed down directly on and to the center of the head of the astragalus; then with a curet he scoops out chips from the cartilage and bone of the head of the astragalus and the greater process of the calcaneus. He sutures the skin or not after removing enough cartilage and bone tissue to permit ample and easy hypercorrection. A plaster cast is worn for several months, renewed every month or two. The feet thus operated on are remarkably supple and no recurrence is possible if the patient is supervised for a time. In three recent cases the infants were only 6, 12 and 15 months old, and the foot had been manipulated into a better position, much facilitating the operative correction for the deformity still left. The subcutaneous scooping out was preceded in each case by tenotomy and the end results are perfect in all, the children now wearing ordinary shoes. At first Savariaud hesitated to operate on the bone in such young children, but the excellent outcome and the harmlessness and simplicity of this subcutaneous technic have converted him to its advocacy. Broca endorses it only for cases in which there is reason to doubt the perseverance of the family in bringing the child regularly two or three times a week to the physician for proper orthopedic manipulations; they are liable alone to accomplish wonders in this line if systematically kept up. Jalaguier has been applying this subcutaneous scooping-out method for some time, and now has a record of ten cases, the ultimate outcome excellent in all. The children were a little older than in Savariaud's cases.

80. **Spasm of the Glottis as Only Sign of Tetany.**—Triboulet and Harvier state that even the Chvostek sign was absent in the case reported and there was nothing to indicate excessive nervous excitability except the spasm of the glottis. The child, an infant 13 months old, died from intercurrent measles pneumonia and the parathyroids were found extremely atrophied on one side while none could be found on the other. Triboulet suggests that spasm of the glottis occurring in this isolated form may have been responsible for the sudden death of certain children recorded as "thymus deaths." The assumption of an isolated spasm of the glottis throws light also on the persistence of symptoms after thymectomy for an unduly enlarged thymus. Electric tests of the excitability of the muscles will prove a valuable aid in differentiating the cause for a tendency to suffocation in children.

81. **Esophagoscopy in Children.**—Guisez reports a number of instructive cases to show the value of the esophagoscope in locating lesions, in facilitating the passage of sounds in cicatricial stenosis and permitting local treatment. Esophagoscopy is comparatively easy in children as the mouth of the esophagus is not closed, as in adults, but gapes rhythmically with inspiration. For a cicatricial stenosis he introduces a narrow bougie with the aid of the esophagoscope and leaves this bougie in place for a few hours. This prepares the way for sounds of a larger caliber and it is thus possible to stretch the lumen to normal size in time in most cases. If not, circular electrolysis through the esophagoscope renders invaluable service. He has had fifty-four patients with cicatricial stenosis resisting all ordinary measures. Only ten required gastrostomy; all the others were cured by the above measures through the natural passages. Twenty-one of the patients were children and all but two have been restored to a clinically normal condition.

82. **Anasarca with Intact Kidneys.**—The 2-months' infant began to lose weight and dropsy developed, the child dying in less than a month. There was nothing to explain the tendency to edema as the child was of healthy parentage and breast fed, and all the organs seemed sound. Necropsy revealed fatty degeneration of the liver while all the other organs were apparently sound and the kidneys intact.

84. **Diagnosis of Enlarged Thymus in Young Children.**—D'Oelsnitz analyzes the symptoms and signs suggesting hypertrophy of the thymus, his conclusions being that it is sometimes extremely difficult to distinguish between an unduly enlarged thymus and enlarged tracheobronchial glands as the cause of the dyspnea. He gives the details of twenty-one cases to illustrate the various points involved, including two in which he was certain that the thymus was hypertrophied, but an operation revealed atrophy of this gland, the enlarged tracheobronchial glands being responsible for the trouble. The special features of enlargement of the tracheobronchial glands are a history of measles, bronchitis or bronchopneumonia, the general lack of dulness over the manubrium, and difficulty in breathing which is experienced mostly during expiration, while the chest is retracted during inspiration, mainly in the lower portion, the depression occurring, if it occurs at all, simultaneously in the epigastrium, the lower sternum region and the hypochondrium on each side. The part of the chest above seems to protrude above the transverse groove resulting from this form of retraction. Sometimes the groove curves up on each side, so the chest above bulges spherically while the retracted portion below flattens out, spreading out on the sides. Roentography shows the normal chest with a shadow like a long-necked bottle, while with enlarged thymus the shadow is irregular, with a protrusion just below the neck of the bottle on one or both sides, but the outline is smooth and the shadow even. With swollen lymph-nodes in the anterior mediastinum, the upper part of the shadow is as normal but below it spreads out irregularly, generally on the right side of the shadow of the heart, the protrusions small and round or finger-shaped, sloping down and outward, sometimes showing several shadows with a circular outline while the depth of the shadow may vary from that of the heart, being either lighter or darker. He gives twenty typical radiographs to show the various features in these different conditions, regarding radiography as indispensable. The dulness with enlarged thymus usually encroaches on the left side.

85. **Tuberculous Rheumatism.**—Veras reports from Smyrna three cases of rheumatic pains in one or more joints in children giving positive tuberculin reactions. The pains dragged along for years without ever reaching the intensity of acute rheumatism, and the arthritis apparently healed, too soon

to accept an ordinary tuberculous process, while the conception of a simple inflammatory process amply explains the facts observed.

Journal de Chirurgie, Paris

July, VII, No. 1, pp. 1-128

86 Technic and Results of Cholecystectomy in Cholelithiasis; 36 Cases. A. Gosset.

August, No. 2, pp. 129-236

87 The Postoperative Gastro-Intestinal Hemorrhages on Record. L. Sauvé.

Lyon Chirurgical, Lyons

September, VI, No. 3, pp. 249-376

88 *Painful Chronic Nephritis and Its Operative Treatment. V. Rochet.
89 *The Normal Consequences of Fracture of the Leg. L. Imbert.
90 Primary Multiple Tumors in Bones. E. Pallasse, C. Roubier and A. Goyet.
91 *Operations on Cervical Sympathetic for Exophthalmic Goiter. A. Chalier. Continued.

88. **Painful Nephritis.**—Rochet reports ten cases in which he operated on the kidney to relieve intense pain in the course of nephritis, with or without pus. He reviews the pathologic findings when the kidney was exposed and the technic appropriate for each nephrolysis, decapsulation, nephrotomy or nephrectomy. The operation put an end to the pain permanently in all the cases, although the later after-history is not known in one instance.

89. **Fracture of the Leg from the Standpoint of Industrial Insurance.**—Imbert expatiates on the revolution in regard to fractures of the leg that has followed the legislation on compensation to working-men for accidents while at work. The aspect of the leg afterward is not considered now, the main point being to restore normal functioning, the legs being extremely important not only for walking but in bearing burdens while the workman has to keep his balance on ladders and scaffolds—function for a day laborer requiring an elasticity and strength not needed by persons of more sedentary occupations. Imbert discusses the various points to be borne in mind and how to prevent persisting pain, shortening, muscular atrophy and stiffness. These various elements of persisting incapacity deserve more careful study, and he warns that the physician should beware of asserting that the patient is quite cured; he must not forget that various lesions engendered by a fracture are durable and sometimes persist indefinitely.

91. **Operations on Sympathetic Nerve for Exophthalmic Goiter.**—Chalier here continues his review of the operations performed by Jaboulay for this purpose and of the end-results. Of the total thirty-one operations, twenty-four of the patients have been reexamined from eight months to fourteen years after the operation and three were found completely cured, nine very much improved, and six may be classed as semisuccessful operations, of the eighteen whose complete history is known. These experiences show that an operation on the cervical sympathetic not only arrests the disease but is liable to be followed by retrogression of the affection amounting to a complete cure. In every patient the most distressing symptoms were mitigated or entirely cured; even those least improved were no longer sick but merely delicate. With a few simple precautions they were able to avoid all functional disturbances, such as palpitation and dyspnea, without need for medication. Even in the least favorable cases, there was manifest improvement sooner or later even after a number of months. The operation has a constant action on the ocular and nervous disturbances; the heart disturbances and the goiter are frequently modified but less regularly and in a less pronounced manner. One interesting effect is a rapid improvement in vision when there had been preceding myopia.

Only eight of the thirty-one patients were men; the age ranged from 17 to 66. Six of the patients died soon after the operation, but in the last ten years there has been no fatality from these operations on the sympathetic. In four of the six deaths, complications on the part of the lungs were responsible for them; another patient succumbed to erysipelas of the face, its fourth recurrence, and the sixth patient died with signs of sudden suffocation, not explained until necropsy revealed a very large and adherent thymus. Ten patients have died during the years since, one from chronic diarrhea, one from heart disease, five from tuberculosis—all intercurrent diseases occurring while the patients were rejoicing at being freed from their exophthalmic goiter. The three other fatalities followed an operation on the thyroid intended to supplement the operation on the cervical sympathetic and complete a radical cure. These cases confirm anew the danger of operations on the thyroid in exophthalmic goiter even for patients immeasurably improved by sympatheticectomy.

Lyon Médical, Lyons

July 16, CXVII, No. 3, pp. 105-148

92 Cure of Exophthalmic Goiter by Ligation of Four Principal Arteries of the Thyroid. X. Delore and H. Alamartine.

July 23, No. 4, pp. 149-208

93 Nodular Rheumatismal Myocarditis with Epithelioid and Giant Cells. L. Gallavardin.

July 30, No. 5, pp. 209-256

94 Old Age and Senility. (Vieillesse et sénilité.) A. Pic.

August 6, No. 6, pp. 257-312

95 The Painful Symptoms in Polycythemia. (Des symptomes douloureux de l'érythrémie.) H. Vaquez and C. Laubry.
96 Tuberculosis of the Larynx and of the Esophagus. F. J. Collet.

August 13, No. 7, pp. 313-360

97 Occlusion of the Nostrils in Treatment of Spasm of the Lids, etc. (Traitement du reniflement et du blepharospasme par l'occlusion des narines.) J. Jaboulay.
98 Hernia of the Diaphragm. (Hernie intra-thoracique. Pyopneumothorax putride par perforation de l'estomac dans le thorax.) P. Courmont and E. Barjon.

August 20, No. 8, pp. 361-424

99 Radiotherapy of Uterine Fibromyomas. E. Barjon.

August 27, No. 9, pp. 425-468

100 Intratracheal Insufflation for Revival of the Asphyxiated New-Born. (Nouvelle méthode d'insufflation dans la mort apparente du nouveau-né.) Plauchu.

Presse Médicale, Paris

August 30, XIX, No. 69, pp. 697-704

101 *Hysteric Coxalgia. A. Broca.

September 2, No. 70, pp. 705-712

102 Antityphoid Vaccination in the Army. (Sur l'emploi facultatif de la vaccination antityphique.) L. Landouzy.

101. **Hysteric Hip Disease.**—Broca analyzes the features of four typical cases of pain and lameness in the hip joint of hysteric origin, emphasizing the special differential points. Among these is the lack of any difference between the aspect of the two hips and lack of the compensating processes in the pelvis and spine when the limb is flexed. Also the possibility of flexing the limb when the patient's attention is diverted and the physician gently and very gradually flexes the knee on the abdomen. The patient seems to feel a pinching of the skin as painful as forcible pressure on the head of the femur. In one of these cases, the patient, a 10-year-old girl, had pronounced adduction and flexion of the left leg. Seated on the edge of the table, there was no trace of scoliosis. She was unable to walk, but the physician told her that this was because her knee had lost its strength and bends, and that she could walk if her knee was held stiff. Holding the knee stiff he encouraged her to take a few steps which she found she could do without pain as long as the knee was held quite stiff, and she was kept walking while he gradually ceased to hold the knee without her perceiving this. When she found that she was walking without aid the cure was complete. Inquiry in the environment of such cases always revealed some one with a hip affection causing lameness and pain, and there was generally a history of some old slight affection involving the hip or leg. In the above case there was a trace of atrophy of the muscles, possibly relics of some torpid paralysis in early life, and subconsciously calling attention to that limb. Another differential point in hysteric coxalgia is the instability of the tender points and the inconsistency between the intensity of the pain on slight contact while forcible deep pressure may be unnoticed. The tranquil expression in comparison with the intensity of the pain, the peaceful sleep at night with none of the paroxysmal cries during slumber of organic disease, and the fact that when the lame child is told to stop she rests on whichever leg she happens to be standing on at the time—all these suggest hysteria. Another sign is that the child keeps the affected knee stiff when asked to pick up something from the floor, while the hip is bent without effort. The little patients do not know that this

is the reverse of what occurs with organic disease. In one of the cases described true organic disease was accompanied by hysteric lameness and pain but radiography and examination under chloroform gave negative organic findings until the head of the femur broke through. In treatment of hysteric coxalgia, Broca warns against any suggestion that treatment will have to be long continued, and he warns especially against immobilization. When the confidence of the patient is gained, the cure predicted by some slight brief treatment is soon realized, and the hospitals witness many cases of such instantaneous cures of both hip and pelvis trouble.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XVI, No. 3, pp. 373-560. Last indexed April 15, p. 1152

103 Ovarian Crises in Course of Tabes Dorsalis. (Zur Kenntnis der genitalen Krisen tabischer Frauen.) H. Offergeld.
104 Primary End-Results of Operative Treatment of Myomas: One Hundred and Fifty Cases. J. Cemach.
105 Right Congenital Hydronephrosis as Cause of Deformity of Internal Female Genitalia. R. Keller.
106 *Tumor in Placenta. A. Kummer.
107 Dwarf Growth. (Zweigwuchs.) F. A. Kehrer.
108 *Encapsulated Tumor in Placenta. (Ein kapseltragendes Chorioangiom.) H. Hauser.
109 Metastasic Malignant Tumor in Ovary. (Zur Kenntnis der Krukenbergschen Ovarialtumoren.) P. Hussy.
110 *Vaginal Tuberculosis: Four Cases. R. Mauler.
111 *Management of Pelvic Presentation and Its Consequences. (Behandlung der Beckenendlagen und ihrer Folgen.) H. Bayer.
112 Relations Between Proliferation of Fetal Cells and Puerperal Involution of the Uterus. (Beziehungen der fötalen Zellwucherungen zur puerperalen Rückbildung des Uterus.) G. Schickele.

106 and 108. **Tumor in Placenta.**—Kummer has found records of seventy-eight cases of a tumor in the placenta and reports another. Pregnancy and delivery had been apparently normal and the child was healthy except that it looked unusually yellow at first. A large fibroma-angioma was found in the placenta. In sixteen of the forty-six cases on record in which the pregnancy progressed nearly to term, there was spontaneous premature delivery. Kraus found mention of hydramnion in nine of his fourteen cases. Asphyxia was common among the children and cardiac defects and kidney trouble in the women.

Hauser has encountered two cases of a benign tumor in the placenta in a comparatively short time. In the present case the tumor had a capsule and the patient was a syphilitic young woman. Delivery was apparently normal at term but the child died within a month.

110. **Vaginal Tuberculosis.**—In Mauler's four cases the vagina had evidently become infected from tuberculous lesions in the genitals above. All four cases were encountered within six months although for years he had been seeking in vain for an instance of vaginal tuberculosis.

111. **Pelvic Presentation.**—In the course of this dissertation on a number of minor points useful to bear in mind, Bayer remarks that he seldom makes use of the Schultze swinging method now; his experiences with it have been discouraging as, for instance, in a case in which a child born with great difficulty in pelvic presentation had been revived after long and tedious blowing air into its lungs. It was breathing spontaneously and whimpering when he thought he would complete matters by swinging it twice, but the child died at once.

Berliner klinische Wochenschrift

September 4, XLVIII, No. 36, pp. 1625-1668

113 *Glycosuria After Pancreatectomy. H. Eppinger and F. Falk.
114 Pathologic Urine Pigment. (Ueber einen neuen pathologischen Harnfarbstoff.) F. Lehmann and W. Zinn.
115 Clinical Determination of Lipoids in the Blood. A. Döblin and L. R. Grote.
116 Clinical Diagnosis of Inversion of Viscera. H. Voit.
117 Cirrhosis of the Liver. IV. (Die Banti'sche Krankheit.) F. Klopstock.
118 *Influenza in Infants. (Klinische und bakteriologische Beobachtungen bei Säuglingsgrippe.) E. Müller and E. Seligmann.
119 *Operative Treatment of Dysphagia with Laryngeal Tuberculosis. A. Blumenthal.
120 Cystic Tumor in Horseshoe Kidney Successfully Removed. (Cystischer Tumor bei Hufeisenniere, durch Operation entfernt; Heilung.) P. Bockenheimer.
121 Differential Diagnosis of Perforating Ulcer. (Ulcus penetrans im Röntgenbilde.) E. Schlesinger.
122 Possibility of Collateral Arterial Circulation for the Kidney. (Ausbildung eines arteriellen Collateralkreislaufes der Niere.) M. Katzenstein.

113. **Glycosuria After Removal of the Pancreas.**—Eppinger and Falk report extensive experimental research with animals fed monoacetyl glucose and other ester compounds of grape sugar with acetic acid or saccharids before and after removal of the pancreas. They show that the assimilation of grape sugar may be profoundly modified while the assimilating power for some of these saccharids may be unimpaired, even after removal of the pancreas. The research suggests that it may be possible to find useful articles of food among these substances, especially for diabetics.

118. **Influenza in Infants.**—Müller refers in particular to influenza assuming the form of sepsis or effusion in the serous cavities of the body. In the septic form the fever sets in high but alternates with subnormal temperature; no disturbance in any organ can be discovered and the general health does not seem to be much disturbed in the majority of cases. In a few cases in his experience, however, the sepsis proved rapidly fatal or the whole syndrome recurred again and again with free intervals of weeks and months. He gives the curves of three such cases. In three others the influenza developed as a pleural empyema; the only infant less than six months old who survived was the only one merely punctured. No attempt at tamponing was made until the symptoms were much mitigated; the suppuration persisted for weeks but the child finally recovered. In three other cases the effusion occurred in the peritoneum and the children succumbed with signs of septic peritonitis. In some cases the symptoms indicated a serous meningitis.

119. **Operative Treatment of Laryngeal Tuberculosis.**—Blumenthal comments on the serious outlook when swallowing becomes so painful that the patients with laryngeal tuberculosis do not get enough nourishment and become intensely depressed. He has succeeded in putting an end to the dysphagia in two cases by resecting the superior laryngeal nerve. He describes the comparatively simple technic, applied to a woman of 33 and a man of 36 as a last resort. The by-effects were slight and transient.

Deutsche medizinische Wochenschrift, Berlin

August 31, XXXVII, No. 35, pp. 1585-1632

123 History of Bronchoscopy and Esophagoscopy. G. Killian.
124 Indications for Endonasal Operations on the Ethmoid Bone. (Indikation der endonasalen operativen Eröffnung und Ausräumung des Siebbeins.) P. Stenger.
125 Difficulty in Removing the Tube After Diphtheria. (Erschwertes Dekanulement und Larynxatresie nach Diphtherie.) M. A. H. Martens.
126 Conservative Radical Operations on the Middle Ear. (Ueber konservative Radikaloperationen des Mittelohres.) L. Stacke.
127 *Improved Technic of Illumination of the Nasal Sinuses, Orbit and Middle Ear. (Neue Methode und neues Instrument für die Durchleuchtung des Siebbeinlabyrinths, der Kieferhöhle, des Mittelohres und der Augenhöhle.) A. v. Gyergyai.
128 *Relations Between Mouth Breathing and Pulmonary Tuberculosis. (Beziehungen der chronischen Nasenstenose zur Lungentuberkulose.) M. Rosenberg.
129 *Diagnosis and Treatment of Peritonsillitis. M. Levy.
130 Radiotherapy in Experimental Tuberculosis of the Eye. (Zur Einwirkung "strahlender Energie" auf die experimentelle Tuberkulose des Auges.) F. J. Flemming and F. Krusius.
131 Changes in the Blood with Simple Gastric Achylia. I. A. Waledinsky.
132 Roentgen Rays in Estimation of Gastric Acidity. (Zur Aziditätsbestimmung des Mageninhalts mittels des Röntgenverfahrens.) G. Schwarz.

127. **Technic for Illumination of the Nasal Sinuses, Orbit and Middle Ear.**—Gyergyai uses an electric lamp, the holder bent sideways at a right angle, this branch being long enough to be introduced to the depths of the maxillary sinus, close to the ear. He has applied it in thirty-eight cases and has been amazed at the instructive oversight thus permitted.

128. **Relations Between Mouth-Breathing and Pulmonary Tuberculosis.**—Rosenberg states that, besides its more familiar evils, chronic obstruction of the nose modifies the respiration in a way that materially favors bacterial invasion. The bacilli not only get into the lower air passages more readily but they find more favorable conditions for colonization, especially in the non-tuberculous shriveling of the right apex which is so common in mouth-breathers, called by Krönig "collapse induration." Rosenberg found this induration at the apex in eighteen of fifty cases of chronic obstruction of the nose, although there was nothing to suggest tuberculosis. Such persons are predisposed to tuberculosis on account

of this local change at the apex. If it is diagnosed as a mild tuberculous process and the patient is sent to a sanatorium for tuberculosis, he is almost certain to contract the disease which otherwise he might have escaped. Such cases explain the negative tuberculin reaction in some of the supposed tuberculous inmates of sanatoriums and the change to a positive reaction later. The obstruction in the nose may be the result of adenoids but deformity of the septum and hypertrophy of the turbinate bones may sometimes be incriminated. Rosenberg cites in conclusion Blümel's experience at the Görbersdorf sanatorium with seventy-five non-tuberculous inmates among the total 1,700 supposedly tuberculous; he discovered twenty-eight cases of this collapse induration in this group of seventy-five. From the Belzig sanatorium it has been reported that nasal affections were found in 84 per cent. and throat affections in 76 per cent. of 120 patients examined. Rivers in England in examining 500 persons found twice as many mouth-breathers among the consumptives as among the non-tuberculous. Rosenberg pleads in conclusion for prompt measures to relieve nasal stenosis and thus ward off these perils.

129. **Peritonsillitis.**—Levy remarks that with this affection the objective signs may be insignificant, especially when it is a recurrence. The first sign is usually slight protrusion of one tonsil. Palpation from without is often instructive; the glands may be swollen on both sides, even when the peritonsillitis involves but one side, and the glands may be very tender. The radiating of the pain to the ear is a constant and early symptom. The general symptoms are by no means so pronounced as with follicular tonsillitis, although there may be chill and some fever; the disturbance in swallowing is generally all the patients complain of. This with the limitation to one side generally differentiate the trouble. His experience with sixty cases showed that early incision had no effect in 33 per cent. of the cases, and he now waits for demarcation as a rule unless the pain is severe. In recurring peritonsillitis the supratonsillar fossa is generally the source of the trouble, and excision of the upper lobe of the tonsil puts an end to all disturbances. It is not necessary to remove the whole tonsil, he says.

Medizinische Klinik, Berlin

August 27, VII, No. 35, pp. 1337-1372 and Supplement

133 Simulation of Insanity. (Simulation von Geisteskrankheit.) J. Peretti.
134 *Dilatation of the Esophagus. (Zur Lehre von der Erweiterung der Speiseröhre.) W. Jüngerich.
135 Prophylaxis of Tabes Dorsalis. J. Lowinsky.
136 The "Nerve Point Theory" in Relation to Balneology. A. Cornelius.
137 *Fleas and Flea Traps. (Zur Naturgeschichte der Flöhe.) B. Harms.
138 Digestive Diseases. (Pathologie und Therapie der Verdauungskrankheiten.) H. Citron.

September 3, No. 36, pp. 1373-1408

139 *Internal Treatment of Gastric Ulcer. (Neuere Gesichtspunkte der internen Behandlung des Magengeschwürs.) K. Glaessner.
140 Nervous Diarrhea. T. G. Janowski.
141 Vaccine Therapy of Gonorrheal Prostatitis and Arthritis. J. Sellei.
142 Water Jet Vacuum Massage in Internal Medicine. (Verwendung der Wasserdruckmassage in der inneren Medizin.) W. H. Dreuw.
143 *Actinomycosis of the Bronchi. (Chronische Bronchialerkrankungen mit Ausschluss der Tuberkulose. XII.) A. Posselt. Commenced in No. 35.
144 Changes Undergone by Iodin Preparations in the Stomach and Upper Duodenum. L. Metzger.
145 Keratoma Palmare and Vitiligo. W. Friedländer.

134. **Dilatation of the Esophagus.**—Jüngerich thinks that greater attention should be paid to the neurasthenia underlying the dilatation of the esophagus in most cases. He relates his experiences with six patients, all but one being men between 24 and 56. Symptomatic treatment is necessary, repeated on recurrence of trouble. It is thus possible to keep the patients free from disturbances for many months at a time, even when a complete cure is not possible. The spasm of the cardia responsible for the trouble generally comes on suddenly; the frequent remissions of longer or shorter duration are characteristic, as also the alternation with spastic phenomena elsewhere and the impossibility of introducing the sound beyond the cardia at times, while at other times it slips smoothly in.

137. **Fleas and Flea Traps.**—Harms discusses the biology and natural history of the flea family and illustrates a little flea trap in common use in the Orient. It consists of a small stick smeared with a sticky substance, the stick inserted in a strip of bamboo, the sides cut out to leave only seven narrow strips. It acts on the principle of sticky fly paper, the bamboo shell keeping the sticky tube from contact with the clothing. The Chinese are said to strew a number of these tiny traps around the bed and wear them in their clothes.

139. **Medical Treatment of Gastric Ulcer.**—Glaessner estimates that only about 25 per cent. of patients with gastric ulcer are ever permanently cured by internal measures alone. He also calls attention to the fact that any gastric juice with an actual digestive action can maintain ulceration in the stomach; hyperacidity is not encountered oftener than in 43 per cent. of the cases with gastric ulcer. Study of the end-results after gastro-enterostomy has convinced the investigators that the benefit from this operation is due exclusively to the reflux of bile and pancreatic secretion into the stomach, thus washing the ulcer with bowel content. This, in connection with the regurgitation of intestinal juice into the stomach after pouring in oil and the benefit therefrom in gastric ulcer, suggests that internal administration of an artificially prepared intestinal juice might have a powerful curative action on gastric ulcer. Glaessner reports experimental research which confirms these views, even a 0.2 per cent. concentration of bile inhibiting digestion *in vitro*, notwithstanding the presence of large amounts of hydrochloric acid. He thinks these facts open new horizons for internal treatment of gastric ulcer.

143. **Actinomycosis of the Bronchi.**—Posselt expatiates on the extreme importance of an early diagnosis as in few affections is treatment so effectual. He reviews extensive experiences of his own and others; they show among other things that the apex of the lungs is occasionally the primary seat but that the bronchi are more often involved. The affection may attack children or adults and there is a comparatively harmless pseudoactinomycosis sometimes observed in the tonsil. Repeated examination of the nasopharynx and of the sputum may be necessary before the true origin of the bronchial affection is discovered, and he is convinced that systematic microscopic examination of the sputum in rural districts would show the disease to be far more frequent than is generally supposed; serologic methods may also aid in the differentiation. Once diagnosed, he gives potassium iodid and calls the surgeon at once, radiography pointing the way to effectual measures. Karewski insists that actinomycosis should be suspected in all cases of slowly developing swellings in the chest, especially in the rear and when preceded by signs of bronchitis, and a tuberculous process can presumably be excluded. He advises operative removal as bound to be successful in the early stages without metastasis.

Münchener medizinische Wochenschrift

August 29, LVIII, No. 35, pp. 1849-1896

146 *Polycythemia. (Ueber Hyperglobulie.) G. v. Bergmann and J. Plesch.
147 Bacterial Origin of Thrombosis and Encephalitis. (Ueber Venenthrombose und hämorrhagische Enzephalitis im Anschluss an bakteriologisch-anatomische Untersuchungen bei Sinusthrombosen—Komplikation mit Chlorose, Eklampsie.) J. Katzenstein.
148 *Hydrocephalus from Obstetric Standpoint. (Bedeutung des Hydrozephalus in der Geburt.) A. Rieländer.
149 Paralysis of the Stomach by General Anesthesia. (Lähmung des Magens durch die Inhalationsnarkose.) E. Mangold.
150 Properties of Coffee and Thum's Coffee-Bean-Cleansing Process. (Die besonderen Eigenarten des Kaffeegetränkes und das Thumsche Verfahren zur Kaffeereinigung und -verbesserung.) E. Harnack.
151 *Technic for Complete Evacuation of Pleural Effusions. H. C. Jacobaeus.
152 Influence of Deficient Oxygen on Blood Production. (Blutvermehrung durch Sauerstoffmangel.) E. Kuhn.
153 Aniilin Poisoning. (Beitrag zur Anilinvergiftung.) W. Friedländer.

146. **Polycythemia.**—Bergmann and Plesch give the tabulated findings in three cases of polycythemia examined with the same detail as Senator's patient. They are inclined to regard the polycythemia as a compensating process in some cases.

148. **Hydrocephalus in Obstetrics.**—Rieländer discusses the various modes in which hydrocephalus may interfere with delivery, and the diagnosis of this anomaly in time at the birth. The main point in diagnosis is for the accoucheur to bear the possibility of hydrocephalus in mind. It is so rare an occurrence that it is seldom thought of as the explanation of the dragging of the birth, but it should be suggested when the head at the pelvic inlet is unusually broad with wide fontanelles and sutures which have a cystic feel. Or when the head shows no tendency to enter the pelvis even with vigorous contractions of the uterus. But one or the other of these three signs and all others mentioned in the textbooks may be lacking, as he shows by three typical cases described in detail. Only careful examination, eventually under general anesthesia, and careful weighing of the different symptoms will permit a true diagnosis. Treatment is very simple, merely to allow escape of the fluid by puncturing the fetal brain. Hammerschlag in his manual published last year stated that 20 per cent. of the mothers succumb—13 per cent. from rupture of the uterus and 7 per cent. from infection. The diagnosis is most difficult when the head presents first; the ineffectual labor keeps up for days, the accoucheur waiting while the impatient midwife keeps repeating her local examination. The uterus then ruptures or the woman's temperature rises. A history of hydrocephalus at a previous birth may be instructive.

151. **Evacuation of Pleural Effusion.**—Jacobaeus thinks that it is extremely important to remove the last traces of a pleural effusion, especially if it is purulent, and he has accomplished this in ten cases by the simple technic described. He introduces a trocar wide enough to permit the passage of a cystoscope through it. The trocar is inserted above the ninth interspace and most of the effusion is evacuated through it, air entering as the patient breathes, replacing the effusion. He then introduces through the trocar a small, soft ureter catheter, the tip weighted with lead. The air escapes readily between the walls of the catheter and the trocar, while the weighted tip drops to the lowest portion of the chest, and the last traces of the effusion can thus be aspirated. If there is thick pus, he pours in salt solution through the catheter and has found it useful to rinse out the cavity in this way in conclusion.

Wiener klinische Wochenschrift, Vienna

August 31, XXIV, No. 35, pp. 1235-1266

154 Neutral Sulphur in Urine as Test for Cancer. (Vorkommen des Neutralschwefels im Harn und seine Verwendung zur Karzinomdiagnose.) E. E. Pribram.
155 Serotherapy in Dentistry. (Ueber Anwendung des Deutschmann-Serums bei schweren dentalen Phlegmonen.) B. Mayrhofer.
156 Hernia in Abdominal Wall. (Kasuistischer Beitrag zur Kenntnis des subkutanen Intestinalprolapses.) E. L. Fieber.
157 Atypical Forms of Psoriasis. R. Volk. Commenced in No. 34.

Zentralblatt für Chirurgie, Leipsic

September 2, XXXVIII, No. 35, pp. 1177-1208

158 *Tube Speculum for Inspecting Peritoneum. (Das röhrenformige Spekulum bei der Bauchfellentzündung.) F. Kuhn.
159 *Technic for Closing the Intestine. (Zur Technik des operativen Darmverschlusses.) T. Voeckler.
160 Roentotherapy of Rhinoscleroma. A. R. v. R. Rydygier.

158. **Speculum for the Peritoneum.**—Kuhn has been using for some years a small tube speculum on the principle of those used for the vagina and rectum, and here expatiates on the instructive oversight thus obtainable. He introduces the speculum with an obturator, repeatedly withdrawing the latter and replacing it before proceding farther, or introducing a rectoscope lamp into the speculum. It is thus possible to inspect the small pelvis and the region behind the stomach, etc., as well as the different parts of the inflamed peritoneum. He always proceeds on the principle that the speculum must enter from a non-infected region, using a separate speculum at each point. A drain can be introduced through the speculum and left as the latter is withdrawn. To prevent inclusion of omentum, he sometimes covers the top of the drain with a layer of gauze. The small incisions, each containing its speculum, permit irrigation without pressure and prevent distention of the abdominal walls. He sometimes uses a more flaring speculum, open along one side, which permits introduction of an instrument.

159. **Operative Closure of the Intestine.**—The stump is tied with a single knot, like a rowboat hitch, untied by pulling on the longer end. The tied stump is then pushed in and the intestine drawn together over it with an ordinary purse-string suture. The first knot is then untied, leaving the invaginated stump free, without any dead space or burying of a foreign body or injury from the necrotic circle where the gut had been tied.

Zentralblatt für Gynäkologie, Leipsic

September 2, XXXV, No. 35, pp. 1233-1264

161 Benefit from Hypophysis Treatment in Case of Osteomalacia. M. Neu.
162 Functioning Ovary Without Menstruation. M. Ogorek.
163 *Acetone in Treatment of Inoperable Uterine Carcinoma. G. Gellhorn.

163. **Treatment of Inoperable Cancer with Acetone.**—Gellhorn says that he has not modified his technic described in THE JOURNAL, April 27, 1907, page 1400, and his experience since has amply confirmed the value of this means of influencing the local symptoms, improving the general health and prolonging life, while the technic of the procedure is extremely simple and the method is painless.

Zentralblatt für innere Medizin, Leipsic

September 2, XXXII, No. 35, pp. 857-880

164 Iodin Test, Based on Mohr's Reaction, for Gastric Acidity. (Ueber eine prinzipiell neue Methode zur Bestimmung der Säure des Magensaftes und ihre klinischen Vorteile.) E. Herzfeld.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 27, XXXII, No. 103, pp. 1083-1098

165 Unreliability for Diagnosis of Butenko's Urine Test with Liquor Bellostii. C. Farmachidis.

August 29, No. 104, pp. 1099-1106

166 "Three-Day Fever" in Catania. G. De G. Giunta.

Policlinico, Rome

August 27, XVIII, No. 35, pp. 1097-1128

167 *Influenza in Pregnancy and the Puerperium. U. Rosi.

September 3, No. 36, pp. 1129-1160

168 *Hypophysis Treatment of Exophthalmic Goiter. (La cura ipofisaria del morbo di Basedow.) A. Salmon.

167. **Influenza in Pregnancy and Puerperium.**—Rosi has encountered fourteen cases of influenza in pregnant women and seven parturients with influenza. The fetus may be injuriously affected and the pregnancy may terminate prematurely or persist unduly long. Differentiation is important, especially in the puerperium, to avoid errors in treatment.

168. **Hypophysis Treatment in Exophthalmic Goiter.**—Salmon reports two cases, the patients women about 45; systematic hypophysis treatment induced such marked improvement that he regards this method of treatment as based on a sound basis, similar to the efficacy of thyroid treatment in deficient thyroid functioning.

Riforma Medica, Naples

August 28, XXVII, No. 35, pp. 953-980

169 Hypertoxicity of the Stool in Pneumonia. G. Breccia.
170 *Picric Acid for Sterilization of the Skin. (Dei recenti metodi di disinfezione della cute e di un nuovo metodo con soluzione alcoolica di acido picrico.) A. Fontana.

170. **Sterilization of the Skin with Picric Acid.**—Fontana uses a 1 per cent. alcoholic solution of picric acid for sterilization of the field of operation, and extols its advantages over other methods. It is as effectual, his tests seem to show, as the tincture of iodin method while it is much more convenient for sterilization of the hands. Both of these methods do away with the long scrubbing indispensable with other technics and which is so liable to chill the patient.

Hospitalstidende, Copenhagen

July 26, LIV, No. 30, pp. 825-856

171 *Gangrene in Infectious Diseases. K. M. Andersen.

171. **Gangrene with Infectious Diseases.**—Andersen's patient was a little girl who had gangrene of the leg about six weeks after the onset of an apparently mild scarlet fever. The progress of the gangrene compelled amputation while a

superficial patch of gangrene on the thigh above healed. He has been able to find only five cases on record of gangrene complicating scarlet fever, but ninety-eight cases in which gangrene developed with other infectious diseases or lesions. Emboli were found only in eleven cases, autochthonous thrombi being responsible for the balance. He discusses the mechanism of the gangrene and in conclusion reports a case of gangrene in the course of osteomyelitis of the femur but the lesion healed in the course of a month. The trouble in both his cases was evidently the result of toxic changes or inflammation in the afferent vessels.

Norsk Magazin for Lægevidenskaben, Christiania

September, LXXII, No. 9, pp. 937-1000

172 Two Cases of Infantile Scorbutus. C. Looft.
173 *Test for Bile in the Blood. (Galdereaktion i blodserum til klinisk bruk.) A. Sunde.
174 Chromocystoscopy. N. Friis.

173. Simple Test for Bile in the Blood.—Sunde has found that it is possible to estimate the intensity of the admixture of bile with the blood with sufficient accuracy for all practical purposes by the length of time necessary for the color reaction to occur when the serum is treated with nitric acid. He has been thus testing the serum from seventy patients and comparing the findings with those from other tests. He used Scheel's modification of Gilbert's test, adding to 20 or 30 drops of the blood-serum, in a test-tube not over 10 mm. in diameter, a little of the reagent made by combining 300 parts nitric acid with 0.06 parts sodium nitrite. The reagent is allowed to flow down the side of the tube and a bluish ring forms at the junction of the two fluids. The interval before the bluish ring becomes evident varies from half a minute to thirty minutes when there is considerable bile in the blood, while with only small proportions the interval ranges from forty-five to sixty-five minutes or longer. It is possible thus to distinguish the pathologic from the non-pathologic cases; the shorter the interval the greater the probability of some local affection in the liver or bile passages interfering with the normal evacuation of the bile. In one case with colic suggesting gall-stones and a slight tendency to jaundice, the reaction occurred in ten minutes and a biliary lesion was assumed; but the urine findings pointed to pyelitis and radiography revealed large calculi in both kidneys. The enlarged right kidney in this case may be compressing the bile passages and thus inducing the cholemia indirectly, with intact biliary apparatus, but, more probably, the tendency to lithiasis involves both the bile and the urine systems.

Ugeskrift for Læger, Copenhagen

August 24, LXXIII, No. 34, pp. 1249-1274

175 Typhoid Epidemic in Danish Province, 1909. A. E. Kæmpegaard.

August 31, No. 35, pp. 1275-1308

176 Wright's Vaccine Therapy. K. Petersen.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

GENERAL MEDICINE. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Volume VI, The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Series, 1911. Cloth. Price, $1.50. Pp. 342, with 15 illustrations. Chicago: Year-Book Publishers, 1911.

AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. Newman Dorland, A.M., M.D., Member of Committee on Nomenclature and Classification of Diseases of American Medical Association. Containing the Pronunciation and Definition of All the Principal Terms Used in Medicine and the Kindred Sciences, Including Dentistry, Veterinary Medicine, Nursing, etc., with Over 60 Extensive Tables. Seventh Edition. Leather. Price, $1 net. Pp. 643. Philadelphia: W. B. Saunders Co., 1911.

DYSENTERY AND LIVER ABSCESS IN BOMBAY. Being the Report of an Enquiry Carried Out by Major E. D. W. Greig, M.D., D.Sc., I.M.S., and Captain R. T. Wells, M.A., M.B., I.M.S., Under the Direction of the Director, Central Research Institute, Kasauli. Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. No. 47. Issued Under the Authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Paper. Price, 3 shillings. Pp. 78, with illustrations. Calcutta: Superintendent Government Printing, India, 1911.

MALARIA IN THE PUNJAB. By Major S. R. Christophers, M.B., I.M.S., Assistant to the Director, Central Research Institute, Kasauli. Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. No. 46. Issued Under the Authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Paper. Price, 3 shillings. Pp. 125. Calcutta: Superintendent Government Printing, India, 1911.

A SYSTEM OF MEDICINE. By Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., Regius Professor of Physic in the University of Cambridge, and Humphry David Rolleston, M.A., M.D., F.R.C.P., Senior Physician, St. George's Hospital, Cambridge. Volume VIII. Diseases of the Brain and Mental Diseases. Cloth. Price, $6 net. Pp. 1070, with illustrations. New York: The Macmillan Co., 1911.

SEWAGE POLLUTION OF INTERSTATE AND INTERNATIONAL WATERS. With Special Reference to the Spread of Typhoid Fever. 1. Lake Erie and the Niagara River. By Allan J. McLaughlin. Bull. 77, Hygienic Laboratory. P. H. and M.-H. S. of the United States. Paper. Pp. 169. Washington: Government Printing Office, 1911.

A TEXT-BOOK OF MEDICAL CHEMISTRY AND TOXICOLOGY. By James W. Holland, A.M., M.D., Professor of Medical Chemistry and Toxicology, and Dean, Jefferson Medical College, Philadelphia. Third Edition. Cloth. Price, $3 net. Pp. 655, with 112 illustrations. Philadelphia: W. B. Saunders Co., 1911.

A TEXT-BOOK OF PHYSIOLOGY. For Medical Students and Physicians. By William H. Howell, Ph.D., M.D., Sc.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Fourth Edition. Cloth. Price, $4 net. Pp. 1018, with 360 illustrations. Philadelphia: W. B. Saunders Co., 1911.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College, Philadelphia. Tenth Edition. Cloth. Price, $5.50 net. Pp. 1328, with 81 illustrations. Philadelphia: W. B. Saunders Co., 1911.

A MANUAL OF THE PRACTICE OF MEDICINE. Prepared Especially for Students. By A. A. Stevens, A.M., M.D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania. Ninth Edition. Leather. Pp. 553. Philadelphia: W. B. Saunders Co., 1911.

THE TREATMENT OF FRACTURES. With Notes on a Few Common Dislocations. By Charles Locke Scudder, M.D., Surgeon to the Massachusetts General Hospital. Seventh Edition. Cloth. Price, $6 net. Pp. 708, with 900 illustrations. Philadelphia: W. B. Saunders Co., 1911.

RUDIMENTS OF REFRACTION. A Reprint of a Series of Papers on Refraction Originally Printed in Physician's Drug News and Office Practitioner. By C. A. Button, M.D. Cloth. Price, $1. Pp. 131, with 11 illustrations. Newark, N. J.: Physicians' Drug News Co. (1911).

A REFERENCE HANDBOOK OF OBSTETRIC NURSING. By W. Reynolds Wilson, M.D., Visiting Physician to the Philadelphia Lying-In Charity. Second Edition. Leather. Price, $1.25 net. Pp. 256, with 61 illustrations. Philadelphia: W. B. Saunders Co., 1911.

THE PHYSIOLOGICAL STANDARDIZATION OF ERGOT. By Charles Wallis Edmunds and Worth Hale. Bull. 76, Hygienic Laboratory. P. H. and M.-H. S. of the United States. Paper. Pp. 58. Washington: Government Printing Office, 1911.

EDUCATIONAL OPPORTUNITIES IN CHICAGO. A Summary Prepared by the Council for Library and Museum Extension. [A. G. S. JOSEPHSON, SECRETARY, JOHN CREERAR LIBRARY.] Chicago, June, 1911. Paper. Pp. 80, with illustrations.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. For the Year 1910. Vol. XXIII. Cloth. Pp. 583, with illustrations. William Warren Potter, Secretary, 238 Delaware Avenue, Buffalo, N. Y., 1911.

RURAL HYGIENE. By Henry N. Ogden, C.E., Professor of Sanitary Engineering in College of Civil Engineering, Cornell University. Cloth. Price, $1.50 net. Pp. 434, with 78 illustrations. New York: The Macmillan Co., 1911.

NURSING IN THE ACUTE INFECTIOUS FEVERS. By George P. Paul, M.D., Town Health Officer, Round Lake, N. Y. Second Edition. Cloth. Price, $1 net. Pp. 246, with illustrations. Philadelphia: W. B. Saunders Co., 1911.

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL MAYO CLINIC, ROCHESTER, MINN., 1910. [Second volume.] Cloth. Price, $5.50 net. Pp. 633, with illustrations. Philadelphia: W. B. Saunders Co., 1911.

FORTY-FIRST ANNUAL REPORT OF ST. LUKE'S HOME AND HOSPITAL IN THE CITY OF UTICA [New York]. October, 1910. With the Names of Officers for the Ensuing Year. Paper. Pp. 56, with illustrations.

A STATISTICAL SURVEY OF INFANT MORTALITY'S URGENT CALL FOR ACTION. By Edward Bunnell Phelps, M.A., F.S.S., 141 Broadway, New York. Editor The American Underwriter, New York. Cloth. Pp. 27.

THE TWENTY-NINTH ANNUAL REPORT OF THE SHELTERING ARMS OF THE PROTESTANT EPISCOPAL CHURCH IN THE CITY OF PHILADELPHIA, 717 FRANKLIN STREET. Jan. 1, 1911. Paper. Pp. 23.

THE BATTLE CREEK SANITARIUM SYSTEM. History, Organization, Methods. By J. H. Kellogg, M.D., Superintendent, Battle Creek, Mich., 1909. Paper. Pp. 215, with illustrations.

OBSERVATIONS ON THE NATURAL HISTORY OF EPIDEMIC DIARRHEA. By O. H. Peters, M.D., D.P.H. Cloth. Price, $2.25 net. Pp. 177. New York: G. P. Putnam's Sons, 1911.